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SIXTH ANNUAL REPORT

OF THE

COMMISSIONER OF LABOR.

189 %. 1

COST OF PRODUCTION: IRON, STEEL, COAL ETC.

REVISED EDITION.

WASHINGTON:
GOVERNMENT PRINTING OFFICE
1891.

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CONTENTS.

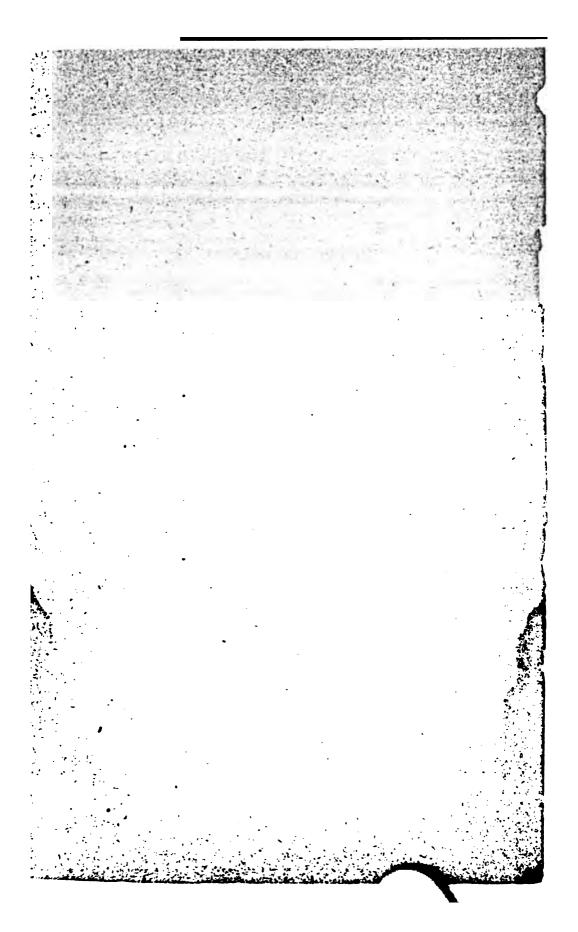
	· Page.
MRSSAGE OF THE PRESIDENT	vii
LETTER OF TRANSMITTAL	ix, x
INTRODUCTION	1-25
Plans adopted	4-6
What is meant by cost of production	8-13
Cost of production as affected by market price and freight of material.	
Freights	
Districts	
The volume of production of pig iron, steel, etc	
	-
PART I.—COST OF PRODUCTION.	
Transport and the same	•
INTRODUCTORY REMARKS	. 29
Pig iron.	
Table I.—Cost of production of pig iron at various establishments in	
various states (titles of 11 sub-tables, omitted here to save space, may	
be found on page 33)	35-61
The North and the South compared as to cost of producing pig iron	62-69
Summaries of cost of pig iron of various grades	
Cost of direct labor, etc., from the materials in the earth to the finished	-
product	75-88
Cost of pig iron, etc., in previous years	88 -96
Production of pig iron at three furnaces in Great Britain not included	
in Table I	97-90
Royalties	
Prices of iron in the United States and Great Britain	101-105
MUCK BAR IRON	
Table II.—Cost of production of muck bar iron at various establish-	
ments in various states (titles of 8 sub-tables, omitted here to save	
space, may be found on page 109)	110-117
Summaries of cost of muck bar iron	-118, 119
Labor cost of muck bar iron at one establishment in Great Britain not	
included in Table II	119, 120
FINISHED BAR IRON	121-135
Table III.—Cost of production of finished bar iron at various establish-	
ments in the various states (titles of 8 sub-tables, omitted here to	•
save space, may be found on page 123)	124-131
Summaries of cost of finished bar iron	132, 133
- , Labor cost of finished bar iron at one establishment in Great Britain	
not included in Table III	,
Prices of finished bar iron	135

中,是是我们是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个	
IV CONTENTS.	1
CONTENTS.	
To the second of the real control of the second of the sec	
	Page.
MISCELLANEOUS IRON	137-147
Table IV Cost of production of miscellaneous iron at various estab-	- 3
lishments in various states (titles of 8 sub-tables, omitted here to	
save space, may be found on page 139)	140-147
STEEL INGOTS	149-159
Table V.—Cost of production of steel ingots at various establishments	1 1,000
	-
in various states (title of 8 sub-tables, omitted here to save space,	0.000
may be found on page 151)	152-159
Summaries of cost of steel ingots	158, 159
STEEL RAILS	161-179
Table VI.—Cost of production of steel rails at various establishments	100
in various states (titles of 8 sub-tables, omitted here to save space,	43
may be found on page 163)	164-167
The average cost of steel rails in the United States and in Europe	168-171
Cost of direct labor, etc., from the materials in the earth to the fin-	
ished product	171–177
Prices of steel rails in the United States and Great Britain	178, 179
MISCRLLANROUS STEEL	181-1 93 '
Table VII.—Cost of production of miscellaneous steel at various estab-	
lishments in various states (titles of 8 sub-tables, omitted here to	
save space, may be found on page 183)	183-193
• • • • • • • • • • • • • • • • • • • •	195-229
BITUMINOUS COAL	190-229
Table VIII.—Cost of production of bituminous coal at various mines	
in various states (titles of 8 sub-tables, omitted here to save space,	
may be found on page 197)	199-223
Summaries of cost of bituminous coal	224-226
Cost of production of coal in Belgium	227
Prices of coal	228, 229
COKE	231-243
Table IX.—Cost of production of coke at various ovens in various	201-210
· · · · · · · · · · · · · · · · · · ·	
states (titles of 7 sub-tables, omitted here to save space, may be	
found on page 223)	234-240
Summaries of cost of coke	241, 242
F' \' Prices of coke	. 243
E IRON ORE	245-263
Table X.—Cost of production of iron ore at various mines in various	
states (titles of 7 sub-tables, omitted here to save space, may be	•
found on page 247).	248-261
8nmmaries of cost of iron ore	262, 263
	•
LIMESTONE.	265-269
. Table XI.—Cost of production of limestone at various quarries in	
various states (titles of 6 sub-tables, omitted here to save space, may	
be found on page 267)	267-269
FREIGHTS	269-282
PART II.—TIME AND EARNINGS—EFFICIENCY OF LABOR.	
	*
TIME AND EARNINGS.	285-597
Table XII.—Actual and theoretical time and earnings (titles of 24 sub-	
tables, omitted here to save space, may be found on page 288)	296-470
Table XIII.—Summary of actual and theoretical time and earnings, by	
occupations	472-575
Table XIV.—Summary of actual and theoretical time and earnings, by	~ !!
industries (titles of 11 sub-tables, omitted here to save space, may be	
found on page 289)	576-579
	- 2

COFTE

THE REPUBLIC OF LABOR	3030.
Take XV.—The efficiency of most by establishment titles of a sub-	
Tables emilled here to eave space, may be detailed at hage 200	3138
Take XVI.—The efficiency of most, by communities which of 4 sub-	
babes, smiller best to easy speec, may be found at page 250	35-3 4
Table IVI - Summary of the efficiency of many by minutes	
Table XVIII The efficiency of labor, by respective - additional estab-	
liminate—tities of 4 ani-tanias, contact here is more apare, may be	
. formi en page 563,	
PART III.—COST OF LIVING.	
	•
INTRODUCTORY MEMARIN	85-6.
THE CORSUMPTION OF FOOD BY NORMAL PARTLESS THERE OF 25 TABLES.	
omitted here to save space, may be found or pages fill and fill	17:-13:00 PM
INCOME AND EXPENDITURE FEE PARTLY IN NORMAL FAMILIES TITLES OF 4	
tables and Li sui-tables, constitut none to more space, may be found on	
page 665	W34
MISCELLANEOUS NOTES ON MARKER ARE C ST OF LIVING.	14-15
LETTER FROM THE WIFE OF A WORKINGHAN OF COST OF LIVING	124-150.
GENERAL TARLES—COST OF LIVING	12:-:13
Table XXX Cost of living, by families titles of the sui-tables, controck	
here to save space, may be found on pages 60% and 607	BCC-1165
Table XX.—Summary of cost of living for each state, by nationalities	
titles of 42 sub-tables, omitted here to save space, may be found on	
pages 607 and 605	1108-207
Table XX Recapitalistion of cost of living, by states titles of &	
mil-tauses, omitted here to more space, may be found on pages with	
and 604	15.05 " S. "
Taum XXII -Summary of cost of living for all states combined, by	
nationalities 'titles of 45 sui-tables, omitted here to save space, may	
be found on page 60% and 610	1812 180
Table XXIII.—Recapitulation of cost of living, by industries (titles of	
e ani-tables, omitted here to save space, may be found on page 610	1.60 . 105
Table XXIV.—Summary of cost of living for all industries combined	
the maternalities (terior of a sub-rables amissed have to see a	

may be found on page 610)



MESSAGE OF THE PRESIDENT.

To the Senate and House of Representatives:

I transmit herewith the Sixth Annual Report of the Commissioner of Labor. This report relates to the cost of producing iron and steel, and the materials of which iron is made, in the United States and in Europe, and the earnings, the efficiency, and the cost of living of the men employed in such production.

BENJ. HARRISON.

EXECUTIVE MANSION,

Washington, D. C., February 14, 1891.

VI



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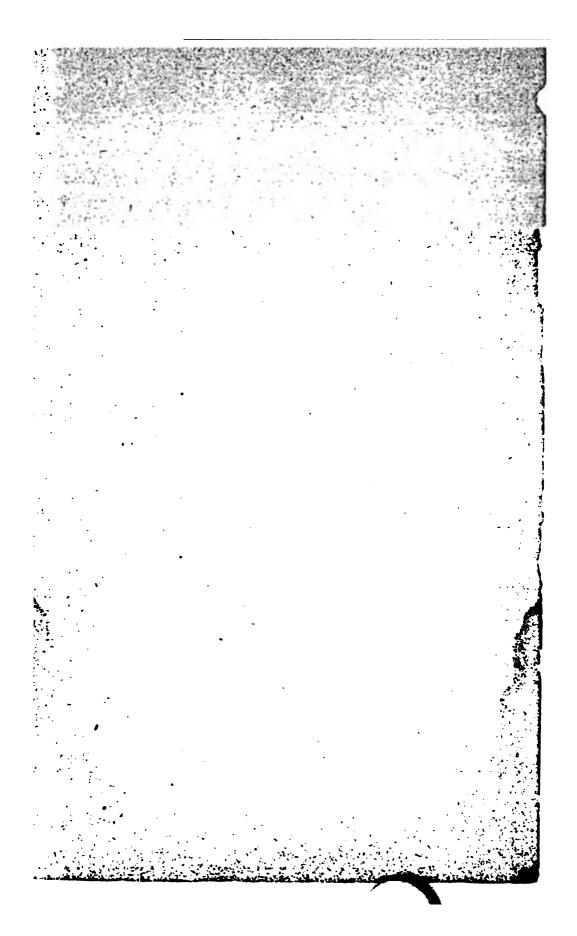
CONTENTS.

Plans adopted			. Lake
Plans adopted 4-8 What is meant by cost of production 5-1-25 Cost of production as affected by market price and freight of material 13, 14 Priciphts 15 The volume of production of pig iron, steel, etc. 15-25 PART I.—COST OF PRODUCTION. INTRODUCTORY REMARKS 20 PART I.—COST OF PRODUCTION. INTRODUCTORY REMARKS 20 PIG IRON 31-105 Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33) 35-61 The North and the South compared as to cost of producing pig iron 24-39 Summaries of cost of pig iron of various grades 70-75 Cost of direct labor, etc., from the materials in the earth to the finished product 75-88 Cost of pig iron, etc., in previous years 88-96 Production of pig iron at three furnaces in Great Britain not included in Table I 97-99 Royalties 97-99 Royalties 97-99 Table II.—Cost of production of muck bar iron at various establishments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 109) 107-120 Table II.—Cost of production of finished bar iron at various establishments in various bates (titles of 8 sub-tables, omitted here to save space, may be found on page 129) 119-117 Summaries of cost of muck bar iron at one establishments in the various states (titles of 8 sub-tables, omitted here to save space, may be found on page 123) 124-131 Summaries of cost of finished bar iron at one establishment in Great Britain not included in Table III 133, 134 Prices of finished bar iron at one establishment in Great Britain not included in Table III 133, 134 Prices of finished bar iron at one establishment in Great Britain not included in Table III 133, 134 Prices of finished bar iron at one establishment in Great Britain not included in Table III 133, 134	•	MESSAGE OF THE PRESIDENT	vii
Plans adopted What is meant by cost of production Cost of production as affected by market price and freight of material. Freights Districts The volume of production of pig iron, steel, etc. PART I.—COST OF PRODUCTION. INTRODUCTORY REMARKS PIG IRON Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33) The North and the South compared as to cost of producing pig iron. Summaries of cost of pig iron of various grades. Cost of direct labor, etc., from the materials in the earth to the finished product. Cost of pig iron, etc., in previous years Production of pig iron at three furnaces in Great Britain not included in Table I Royalties Table II.—Cost of production of muck bar iron at various establishments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 109). Interval III.—Cost of production of finished bar iron at various establishments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 129). Table III.—Cost of production of finished bar iron at various establishments in the various states (titles of 8 sub-tables, omitted here to save space, may be found on page 123). 100-117 Summaries of cost of muck bar iron at one establishment in Great Britain not included in Table III. 110-118 Summaries of cost of finished bar iron at one establishment in Great Britain not included in Table III. 121-135 Summaries of cost of finished bar iron at one establishment in Great Britain not included in Table III. 122-131 Summaries of cost of finished bar iron at one establishment in Great Britain not included in Table III. 123, 133 Labor cost of finished bar iron at one establishment in Great Britain not included in Table III. 133, 134 Prices of finished bar iron at one establishment in Great Britain		LETTER OF TRANSMITTAL	ix, x
What is meant by cost of production		Introduction	1-25
What is meant by cost of production		Plans adopted	4-8
Cost of production as affected by market price and freight of material. Freights			8-13
Freights			
Districts 15 The volume of production of pig iron, steel, etc. 15-25 PART I.—COST OF PRODUCTION. Introductory remarks 29 Pig iron 15 Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33). 35-61 The North and the South compared as to cost of producing pig iron. Summaries of cost of pig iron of various grades 70-75 Cost of direct labor, etc., from the materials in the earth to the finished product 75-88 Cost of pig iron, etc., in previous years 88-96 Production of pig iron at three furnaces in Great Britain not included in Table I 97-90 Royalties 70-90 Ro			•
PART I.—COST OF PRODUCTION. INTRODUCTORY REMARKS			
INTRODUCTORY REMARKS			
Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33)		PART I.—COST OF PRODUCTION.	,
Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33)		Introductory remarks	20
Table I.—Cost of production of pig iron at various establishments in various states (titles of 11 sub-tables, omitted here to save space, may be found on page 33)			31-105
be found on page 33)		Table I.—Cost of production of pig iron at various establishments in	
Summaries of cost of pig iron of various grades			35-61
Summaries of cost of pig iron of various grades		The North and the South compared as to cost of producing pig iron	62-69
Cost of direct labor, etc., from the materials in the earth to the finished product			70-75
Cost of pig iron, etc., in previous years			
Production of pig iron at three furnaces in Great Britain not included in Table I 97-99 Royalties 100 Prices of iron in the United States and Great Britain 101-105 MUCK BAR IRON 107-120 Table II.—Cost of production of muck bar iron at various establishments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 109) 110-117 Summaries of cost of muck bar iron 118, 119 Labor cost of muck bar iron at one establishment in Great Britain not included in Table II 119, 120 Finished Bar Iron 121-135 Table III.—Cost of production of finished bar iron at various establishments in the various states (titles of 8 sub-tables, omitted here to save space, may be found on page 123) 124-131 Summaries of cost of finished bar iron 132, 133 Labor cost of finished bar iron at one establishment in Great Britain not included in Table III 133, 134 Prices of finished bar iron 135		product	75-88
in Table I		Cost of pig iron, etc., in previous years	88 -9 6
Royalties			
Prices of iron in the United States and Great Britain			
MUCK BAR IRON			
Table II.—Cost of production of muck bar iron at various establishments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 109)		Prices of iron in the United States and Great Britain	
ments in various states (titles of 8 sub-tables, omitted here to save space, may be found on page 109)		MUCK BAR IRON	. 107-120
space, may be found on page 109)	,		
Summaries of cost of muck bar iron		· · · · · · · · · · · · · · · · · · ·	
Labor cost of muck bar iron at one establishment in Great Britain not included in Table II			
included in Table II			-118, 119
FINISHED BAR IRON			
Table III.—Cost of production of finished bar iron at various establishments in the various states (titles of 8 sub-tables, omitted here to save space, may be found on page 123)			•
ments in the various states (titles of 8 sub-tables, omitted here to save space, may be found on page 123)			121-135
Save space, may be found on page 123) 124-131			
Summaries of cost of finished bar iron		ments in the various states (titles of 8 sub-tables, omitted here to	
- , Labor cost of finished bar iron at one establishment in Great Britain not included in Table III		save space, may be found on page 123)	124-131
not included in Table III		Summaries of cost of finished bar iron	132, 133
not included in Table III		, Labor cost of finished bar iron at one establishment in Great Britain	
Prices of finished bar iron	:	not included in Table III	133, 134
-		Prices of finished bar iron	135
			ш

	N. Committee
IV CONTENTS.	1
	Page.
MISCELLANEOUS IRON	137-147
Table IV Cost of production of miscellaneous iron at various estab-	
lishments in various states (titles of 8 sub-tables, omitted here to	100
save space, may be found on page 139)	140-147
Steel ingots	149-159
Table V.—Cost of production of steel ingots at various establishments	W. A. 1 800
in various states (title of 8 sub-tables, omitted here to save space,	
may be found on page 151)	152-159
Summaries of cost of steel ingots	158, 159
Table VI.—Cost of production of steel rails at various establishments	101-175.
in various states (titles of 8 sub-tables, omitted here to save space,	
may be found on page 163)	164-167
The average cost of steel rails in the United States and in Europe	168-171
Cost of direct labor, etc., from the materials in the earth to the fin-	
ished product	171–177
Prices of steel rails in the United States and Great Britain	174, 179
MISCRLLANROUS STEEL	181-193
Table VII.—Cost of production of miscellaneous steel at various estab- lishments in various states (titles of 8 sub-tables, omitted here to	
save space, may be found on page 183)	183-193
BITUMINOUS COAL	195-229
Table VIII.—Cost of production of bituminous coal at various mines	200 200
in various states (titles of 8 sub-tables, omitted here to save space,	
may be found ou page 197)	199-223
Summaries of cost of bituminous coal	224-226
Cost of production of coal in Belgium	227
Prices of coal	228, 229
Table IX.—Cost of production of coke at various ovens in various	231-243
states (titles of 7 sub-tables, omitted here to save space, may be	
found ou page 223)	234-240
Summaries of cost of coke	241, 242
Prices of coke	243
IRON ORE	245-263
Table X.—Cost of production of irou ore at various mines in various	
states (titles of 7 sub-tables, omitted here to save space, may be	040.000
Summaries of cost of iron ore	248-261
LIMESTONE.	262, 263 265-269
Table XI.—Cost of production of limestone at various quarries in	200-209
various states (titles of 6 sub-tables, omitted here to save space, may	
be found on page 267)	267-269
FREIGHTS	269-282
PART II.—TIME AND EARNINGS—EFFICIENCY OF LABOR.	
TIME AND BARNINGS.	285-597
Table XII.—Actual and theoretical time and earnings (titles of 24 sub-	
tables, omitted here to save space, may be found on page 288)	296-470
Table XIII.—Summary of actual and theoretical time and earnings, by	•
occupations	472-575
Table XIV.—Summary of actual and theoretical time and earnings, by	•
industries (titles of 11 sub-tables, omitted here to save space, may be	
found on page 289)	576– 579
	*. \\ 2 *** - ****

THE OF MARK IN MICHAEL STREET BY MARK AND AND AND THE POST OF A STREET AND A STREET AND A STREET AND A STREET AND A	All the second
	A CONTRACTOR
CONTENTS.	▼
	Page.
THE EFFICIENCY OF LABOR	581-601
Table XV.—The efficiency of labor, by establishments (titles of 4 sub-	
tables omitted here to save space, may be found on page 583)	591-596
Table XVI.—The efficiency of labor, by occupations (titles of 4 sub-	~ **
tables, omitted here to save space, may be found on page 583)	597-599
Table XVII.—Summary of the efficiency of labor, by industries	600
Table XVIII.—The efficiency of labor, by industries—additional estab-	
lishments—(titles of 4 sub-tables, omitted here to save space, may be	
, found on page 583)	601
PART III.—COST OF LIVING.	
· ·	•
Introductory remarks	605-617
THE CONSUMPTION OF FOOD BY NORMAL FAMILIES (titles of 26 tables,	
omitted here to save space, may be found on pages 619 and 620)	618-664
INCOME AND EXPENDITURE PER FAMILY IN NORMAL FAMILIES (titles of 4	• '
tables and 14 sub-tables, omitted here to save space, may be found on	
.page 665)	665–690
MISCELLANEOUS NOTES ON MANNER AND C ST OF LIVING	680-687
LETTER FROM THE WIFE OF A WORKINGMAN ON COST OF LIVING	68H-690
GENERAL TABLES—COST OF LIVING	691-1376
Table XIX.—Cost of living, by families (titles of 42 sub-tables, omitted	
here to save space, may be found on pages 606 and 607)	
Table XX.—Summary of cost of living for each state, by nationalities	, •
(titles of 42 sub-tables, omitted here to save space, may be found on	
pages 607 and 608)	1166-1271
Table XXI.—Recapitulation of cost of living, by states (titles of 48	
sub-tables, omitted here to save space, may be found on pages 608	
and 609)	1272-1311
Table XXII.—Summary of cost of living for all states combined, by	
nationalities (titles of 48 sub-tables, omitted here to save space, may	
be found on page 609 and 610)	1312-1355
Table XXIII.—Recapitulation of cost of living, by industries (titles of	
8 sub-tables, omitted here to save space, may be found on page 610)	1356-1362
Table XXIV.—Summary of cost of living for all industries combined,	
by nationalities (titles of 8 sub-tables, omitted here to save space,	
man he found on mans 610)	1000 1000

21.



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To the Senate and House of Representatives:

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BENJ. HARRISON.

EXECUTIVE MANSION,

Washington, D. C., February 14, 1891.

VII

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LETTER OF TRANSMITTAL.

DEPARTMENT OF LABOR, Washington, D. C., February 13, 1891.

SIE: I have the honor to transmit herewith the Sixth Annual Report of the Commissioner of Labor. This report relates to the cost of producing iron and steel, and the materials of which iron is made, in the United States and in Europe, and the earnings, the efficiency, and the cost of living of the men employed in such production.

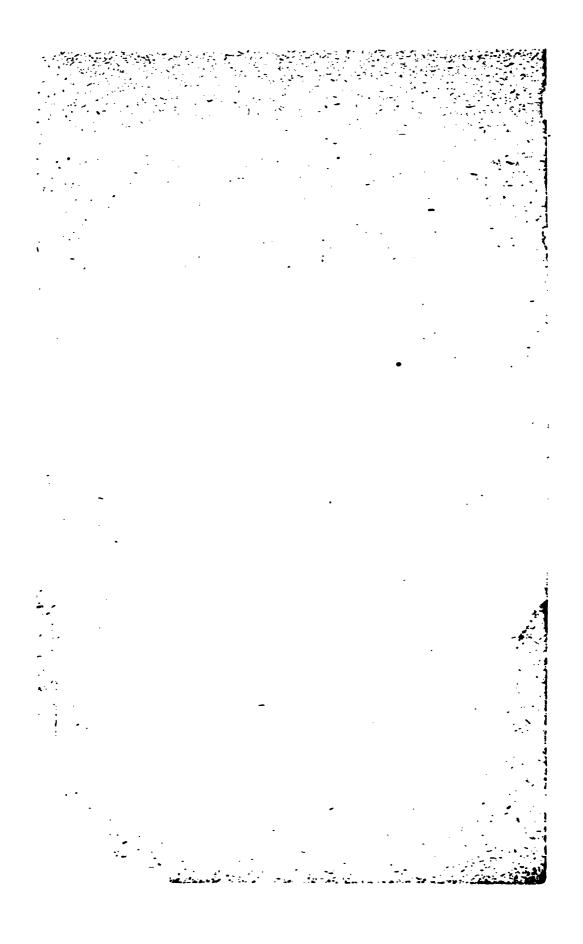
The organization of a statistical office requires that the efforts of each individual attaché be merged into the complete work of all, and so one who is particularly prominent cannot be known or his specific services recognized, as is the case in other and larger departments, where the organization into bureaus and divisions enables the chief officer of such subdivision to make a report to his chief of the special work committed to his charge, such report becoming an integral part of the report of the head of the department. This investigation into the cost of production, the earnings and efficiency of labor, and the cost of living has tested the ability and endurance of our force to a very large degree, and so much difficult work has been performed, that it is but just to recognize those who have borne the brunt of the exacting duties essential to the success of the investigation. As this cannot be done by the reports of individual officers, I take pleasure in naming them.

Mr. Oren W. Weaver, the chief clerk from the inception of this Department (and of its predecessor, the Bureau of Labor), has given the strictest attention to details and the supervision of the working forces of the Department. His long statistical experience has been of the greatest value in every direction. The collection of material for the cost of production, the most difficult side of the field work, has been made by Messrs. Bernard, Gould, McGhee, Waudby, and (during the latter part of the investigation) Weber for Great Britain and the con-

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INTRODUCTION.

This report comprehends the results of an investigation, so far as iron, steel, bituminous coal, coke, iron ore, and limestone are concerned, carried on under the following provision contained in an act of Congress approved June 13, 1888, and entitled "An act to establish a Department of Labor," such act being the organic law of the Department:

SEC. 7. That the Commissioner of Labor, in accordance with the general design and duties referred to in section one of this act, is specially charged to ascertain, at as early a date as possible, and whenever industrial changes shall make it essential, the cost of producing articles, at the time dutiable in the United States, in leading countries where such articles are produced, by fully specified units of production, and under a classification showing the different elements of cost, or approximate cost, of such articles of production, including the wages paid in such industries per day, week, month, or year, or by the piece, and hours employed per day; and the profits of the manufacturers and producers of such articles; and the comparative cost of living, and the kind of living.

Immediately after the passage of this law plans were formulated for collecting the information specified, and practical operations under these plans were commenced in December, 1888. The first matter to demand attention was the selection of industries to be investigated. As the law clearly specifies that articles dutiable in the United States should be selected, it became necessary to select not only those articles upon which a considerable duty is collected, but those for which a clearly defined and standard unit could be established. An examination of the statistics of imports reported by the bureau of statistics of the treasury department showed the following facts relating to the leading imports:

DUTIABLE VALUE OF CERTAIN IMPORTED PRODUCTS.
[Dutiable value of all imports for the year ending June 30, 1888, \$488, \$44,574; for the year ending June 30, 1890, \$522,641,780.]

	For the year ending-				
Products.	Jane 30,	1880.	June 30, 1880.		
	Dutiable value.	Percent. of all imports.	Dutiable value.	Per cent. of all imports.	
Sugar, melasses, candy, and confectionery	\$81, 249, 845 70, 539 , 457	16.63 14.43	9F9, 734, 684 71, 846, 515	17. 14 13. 73	
Flax homp, jute, and other vegetable substances,	46, 174, 036	R 45	48, 306, 306	9. 22	
Hilk, manufactures of	25, 122, 766	7.19	38, 696, 374	7. 30	
Cotton, menufactures of	26, 803, 942	5.49	29, 914, 055	8.71	
Glass and glasswers	7, 713, 921	1.58	7, 352, 513	1.40	
Glass and glassware	43, 685, 451	8.96	44, 005, 215	8.42	
Total	311, 491, 410	63.75	3:3, 804, 722	63.00	

From the foregoing statement it will be perceived that, eliminating sugar, molasses, candy, and confectionery, a very large percentage of Auties is collected on the textiles and iron and steel, using these terms in their general sense. The investigation under the law, then, was shaped to comprehend iron and steel, and the materials of which iron is made, the textiles, and glass. All the results of the investigation will be contained in a series of reports, the present comprehending, as stated, the results so far as iron and steel and the materials of which iron is made are concerned. The results relating to the other industries will be reported later in the year.

For the purpose of clearness of presentation this report is divided into three parts. Part I relates to the cost of production, Part II to wages (time and earnings) and the efficiency of labor, and Part III to the cost of living.

PLANS ADOPTED.

After the fullest consideration of the instructions of Congress and consultation with manufacturers in different parts of the country it was determined to make the investigation as broad as possible. To carry on a searching and analytical study of the cost of production in the industries selected, schedules were arranged, in order that all the information collected from different countries should be upon a uniform basis, and these schedules were formulated on the advice of practical manufacturers.

The investigation assumed three great features, the first relating to the cost of production of the articles selected, which must be articles baving definite and equal units, such as a ton of Bessemer pig iron rather than a steam engine or mowing machine, the information to be gained from the account books of the establishments producing the goods. The second feature covered the rates of wages, time, earnings, and efficiency of the labor connected with the establishments furnishing the information on the cost of production, all the information under this feature to be secured from the pay accounts of the establishments. The third feature was the collection of facts covering the cost of living, total earnings, and expenditures of the men employed in the establishments called upon to furnish data relative to cost of production, earnings, and efficiency, these facts to be gathered from the men themselves. This wide and comprehensive plan, as originally adopted, has been carried out relative to the industries named, and to an extent and with a success far beyond the expectations of the officers of the Department when it was adopted.

Of course the results of this great inquiry, as must be the case in all other investigations, do not reach the statistical ideal of the collection and presentation of important facts; but the result can be honestly designated a "statistical triumph," in securing which many intelligent, fearless, well-informed manufacturers have been willing,

for the benefit of the world, to give all the facts called for relating to their business. It is a delicate matter to ask a manufacturer to give all the facts and figures relating to the cost of producing his goods; but manufacturers, like other people, are becoming familiar with the idea of governmental inquiry into conditions, and are more and more convinced that not only does no harm come to them from an honest statement of the facts sought, but on the contrary that great good may be derived from such statement. It is a source of very great regret that the names of the companies and individuals who have contributed to the value of this investigation cannot be stated. It would be a pleasure to thank them publicly for their generous and courteous treatment of the Department through its representatives in Europe and America. A statement of the names of such concerns would alone emphasize the truthfulness of this report. Of course not every manufacturer who was asked to furnish the information accepted the invitation; but 618 establishments responded and have contributed the facts necessary for the production of this report. These establishments are distributed as follows:

ESTABLISHMENTS EMBRACED IN COST OF PRODUCTION TABLES (a).

1	mente.
Pig irva	11
Muck bar iron	3
Inished bar iron	1
Liscellaneons iron	
teel ingote	:
Keel Tails	
fiscellaneous steel	
Stuminous coal	1
oke	. •
ron ore	1
Total .	

⁶ In a preliminary report on the cost of production of iron, atoul, etc., made to Congress July 1, 1800, 412 establishments were presented. This full report, then, comprehends 206 more establishments than were covered by the preliminary report; as these are inserted at their proper places the numberings in the preliminary report could not be preserved in this more complete statement.

While so large a number of establishments have responded to the call of the government, the difficulties in the way of carrying out the instructions of Congress as given in the act cited have been almost insurmountable. They were quite fully appreciated at the start, but they naturally increased as the work progressed. That the design of the investigation was to obtain the facts from books of account and payrolls of establishments clearly indicates one feature of the difficulties encountered. In all cases parties have been assured that the reports should be so made that in no wise could there be an identification of their individual establishments, therefore the names of establishments are omitted and numbers take their places. The difficulties in securing information from iron and steel manufacturers were not encountered

first by this Department. July 17, 1885, and again on a later date, Hon. Daniel Manning, then secretary of the treasury, undertook to collect information relating to the cost of producing iron and steel from the iron and steel manufacturers of the country through the officers of the American Iron and Steel Association, which association in its reply to the honorable secretary, of date November 10, 1885, stated:

In our replies to the communications referred to we have expressed our entire willingness to aid in the collection of information from these manufacturers. At the same time we expressed the opinion that the value of our work would be impaired if the department (treasury) should also address its inquiries directly to individual manufacturers. We now regret to say that the information we have obtained is not so full or so comprehensive as we have desired that it should be.

The American Iron and Steel Association embraced on the 1st of January of the present year (1885) 171 companies, 77 firms, and 22 individuals, or a total of 270 members. This membership was directly identified with the manufacture of iron and steel in every form in every state of the Union that contains an iron or steel industry. Besides this absolute membership the association regularly corresponds with

all other iron and steel manufacturers in the United States.

Suitable interrogatories were promptly prepared, and application for the desired information was made early in August last to all iron and steel manufacturers. (In the phrase "iron and steel manufacturers" we include the owners or operators of blast furnaces, rolling mills, and

steel works, and the producers of hammered iron blooms.)

Early in September we again addressed all manufacturers who had not responded to our first communication. Copies of the interrogatories referred to and of the circular letters accompanying them were promptly transmitted to the treasury department. Of the more than 550 companies, firms, and individuals addressed by the association less than one-fourth have responded in writing; of this number several have refused to give any information whatever, and many others have given very imperfect information. Some have doubtless addressed the department directly, and we understand that replies will also be made by a few organizations representing special iron or steel interests. Of the large number who have not formally responded to the interrogatories of the association many have personally given reasons for not responding, which were similar to those assigned by others in writing. This nowillingness or refusal to respond to a call for information from the officers of this association is an experience to which we are entirely unaccustomed.

The inquiry naturally suggests itself, Why has the information been withheld by so many manufacturers? Various reasons for this action may be assigned. Many manufacturers do not keep their accounts with sufficient minuteness to enable them to give the information requested; others naturally shrink from exposing the details of their business to any person, fearing that they might even by accident be seen by their rivals; others do not care to take the trouble to compile the details; others believe that the details if given would fall into the hands of government officials who are not experts, and who would, therefore, be liable to misunderstand or miscoustrue them; while others again decline to give information because they are earnestly opposed to any further revision of the tariff, and think that if they would give the details requested they would thereby be committing themselves to the

support of a policy which they do not believe in. Whether or not all these reasons can be accepted as satisfactory we must respect the book-keeping difficulties, the earnest convictions, and even the timidity of business men who represent large interests and have much at stake.

If the Iron and Steel Association met with the difficulties recited in their reply to the honorable secretary of the treasury, it would not have been surprising if the Department of Labor had met with greater ones. It is gratifying, however, to know that with the exception of the manufacturers of steel rails producers have made no very great opposition to the inquiry ordered by Congress. The difficulties have been inherent ones, and not those arising, as a rule, from temper or indisposition.

The methods adopted by the Department of Labor aided the prosecution of the investigation to a very large degree. Experts and agents were sent directly to the producer. The experience of the Iron and Steel Association, and the experience of this and other departments and bureaus engaged in the collection of industrial statistics, has for many years condemned the correspondence method of collecting such facts. It has, with rare exceptions, been a failure. The personal method, that of sending well-informed, well-instructed agents to obtain in person what is wanted, is the only one that will secure satisfactory results. The advantage of this latter method is that a well-informed man on the spot can answer all objections and show clearly all advantages. The plan adopted comprehended an investigation in all parts of the United States where iron and steel are produced, in Great Britain, and in the iron and steel producing countries of the continent of Europe.

The results of the investigation will be dealt with under the analysis of tables and at the proper points. It may be remarked in general, however, that the fullest confidence can be placed in the trustworthiness of the report. It is weak here and there, especially in the steel rail industry, as already indicated, but the weakness is the consequence of the impossibility of securing what was wanted. If we have not a sufficient number of establishments in any industry to be considered representative, it is not the fault of the Department. It is our opinion, however, that the number and distribution of establishments is adequate to establish the representative character of the report. If the question is raised, Why did not the Department give facts for great steel rail manufactories or other works which would show, perhaps, more clearly a greater variety of products, or which would represent different processes and methods? the answer is, that such establishments could not be induced to give the information sought. Whatever omissions may be discovered, not only in range, but in the character of the information given, are in no respect the fault of the Department. This may be said, however, as to the former—the range of facts covered—that out of the innumerable inquiries that might be suggested as likely to elicit data of value it was necessary to make a selection in order to confine the work within reasonable limits. The Department has aimed to make a judicious selection, but it will not be strange if some find information lacking on minor points of significance in their estimation. Similarly, of the form of presentation for each of the many tables, it may be stated in advance that the possible needs of all classes of persons who will have occasion to consult them have been carefully considered, and such arrangement finally adopted as seemed best on the whole. There may be exclusions which somebody wants to see, inclusions which some will deem superfluous, and an order of grouping the facts which will not emphasize relations some would desire to have brought out. No claim is made in these things that in devising and presenting nearly 400 original tables, as is the case here, nothing has been forgotten or neglected, as such a claim would be absurd; but it is claimed that there has been conscientious thought bestowed on all these little matters, believing that it is in the aggregation of little perfections that a symmetrical whole is developed.

WHAT IS MEANT BY COST OF PRODUCTION.

By cost of production (a) we mean, for the purposes of this report. the expense of production. The term has not been used in any technical or metaphysical sense, although from the facts reported the economic cost of production as indicated by the waste or consumption of material or of time can be ascertained. In arriving at the cost of production all expense for interest, insurance, depreciation of the value of plant, and (where existing) royalty to the owners of the soil has been excluded. as have also all charges for freight of product to place of free delivery. The facts upon these points, except the last, have been collected from such manufacturers as have seen fit to give them and have been tabulated separately, so that any one who does not agree with the position of the Department can for himself ascertain what the cost of production would be with these excluded elements added. For the purpose of this investigation it has been deemed sufficient to include only those elements of cost which are universal, positive, and absolutely essential, that is, those elements of cost that are common to all producers and which must be borne in order to bring out the completed product. Interest can hardly be called an element of cost of production because

a The term cost of production is used in at least four different meanings in economic discussion.

^{1.} It may mean the fatigue or irksomeness of labor. Those engaged in extractive industries are most conscious of this meaning. Thus a farmer, doing much of his work with his own hands, instead of paying for it with wages will often count the cost of this or that farm operation, or this or that crop, in terms of his own effort and weariness. Prof. J. E. Cairnes, in his "Leading Principles of Political Economy Newly Expounded," (New York, Harper & Brothers), insisted that in economic theory cost of production must always mean the fatigue of muscle and brain. Wages, interest, etc., he said, are not the cost of production; they are the rewards of production. Labor and enterprise drift to those places and into those

of the variation of the amount of interest which enters into the estimates of concerns.

Moreover, an establishment may have no interest money to pay, considering its plant as "sunk," or it has charged off a certain percentage each year for a sufficient number of years to wipe out the entire cost of plant, and so thereafter interest can play no part in the balance sheets or accounts of the concern. The whole amount charged off has been paid out of profits, and could not be reckoued as any part of the cost of producing a single ton. The man who pays a large interest must be content with a smaller profit. If he borrows his capital he reduces his margin of profit. The concern that has completely wiped out the cost of its plant, through a systematic and continued charging off, has the advantage, and its subsequent profits are larger. Some manufacturers in different industries charge, for instance, 6 per cent. on the entire plant to the cost of production, dividing it over the year's output. In such a case, if the goods are sold at this cost, the manufacturer claims that he has made no profit, when in fact he has made 6 per cent., and this 6 per cent. offsets the interest he would have obtained for his capital invested in some other direction. He loses his personal services, however; or, to state it differently, he secures 6 per cent. for the care of his capital. Most European producers of iron and steel, and all in America inquired of, have been found to consider their plant sunk

occupations in which they get the greatest rewards in proportion to cost, i. e., the greatest wages and profits in proportion to exertion of body and mind.

2. Cost may mean the destruction of one objective or material utility in the production of other utilities. Agriculture uses up seed, grain, manures, and implements, destroying the utilities embodied in them, to produce further harvests; manufactures and transportation destroy coal to produce steam power. We have to use "cost" in this sense whenever we inquire whether a nation is increasing its material means of satisfaction by the ways in which it consumes its resources.

3. Cost may mean the sacrifice of an alternative utility, opportunity, or value. The blacksmith might be able to make \$1.50 a day as an agricultural laborer, when any other man in the neighborhood could make but \$1.25; but, being able as a smith to make \$2 a day, he stays at his forge. He will estimate the cost of production of his work at the value of his best alternative employment—the \$1.50 a day. It is in this sense we constautly use the word "cost" in discussions of international trade. Thus a nation that could produce iron at \$11 a ton may import it at \$13, simply because the labor and capital that would produce a ton of iron at \$11 may be productive of enough wheat or cotton to buy a ton and a half or two tons, at \$13.

4. Finally, cost may mean the sum of all the prices paid for the materials and labor and sacrifices involved in production. This is what the business man ordinarily means by cost.

Cost in this latter sense is not always a cause of value or price; that is, the price of a product is not necessarily determined by its cost of production in terms of the prices of labor and materials. On the contrary, the price of the final product may determine how much the producer will offer for materials and labor. It is impossible here to truce out all the relations of cause and effect, but one general frinciple will hold good. More than one final product is commonly made from the same raw material, and the prices of those products, even after allowing for all other differences in expenses, may be very unequal. Nevertheless, the various producers will buy their raw material at substantially the same price, and that price cannot exceed the market value of the least valuable product made from the material. It is therefore the least valuable product that determines the cost of production for all other products made from the same raw material, or by substantially the same kind of labor. This cost of production, acting on the supply of the other products, tends to bring down their market prices to an equality with the least valuable product; that is, it becomes, in their cases, a cause of value.—Prof. F. H. Giddings, Bryn Mawr College.

to start with, and have advised the Department that the only infinence which the value of plant can have upon the cost of production is through charges for repairs, and not through interest added to the positive elements of cost.

The depreciation of value of the plant, which often occupies so much of the attention of writers when speaking of the cost of production, offers a very great stumbling block in any statistical study of the cost of production. In arriving at our conclusions, which resulted in not considering this as a positive and universal element in the cost of production, we have been greatly aided not only by manufacturers themselves but by a work on The Depreciation of Factories and their Valuation, by Ewing Matheson, M. Iust. C. E., published in London in 1884. The present writer has freely used Mr. Matheson's language wherever it has been applicable to this discussion.

It is true that the cost of repairs should be charged into the cost of production, and it is believed that the full force of the idea that depreciation should enter into the cost of production has in this way been met; that the integrity of the influence of depreciation has been preserved, and without the difficulties which would arise from an attempt to add any sum representing depreciation.

Deterioration of a plant by time and use, the appraisement of the loss and its allotment in the accounts, are matters of great importance, of course, in the economy of management; but no fixed rules or rates of depreciation can be established for general use, because not only do trades and processes of manufacture differ, but numerous secondary circumstances have to be considered in determining the proper course. The question of depreciation cannot be separated from that of maintenance, and in theory one may be said to balance the other. If this is the case, the absolute replacement of some portion of the plant every year may thus maintain an average aggregate value. In only two kinds or classes of plant, however, can such an exact balancing of loss by repairs and renewals be ventured on; one, where the plant wears out so quickly as to need replacement at short intervals, affording constant proof by the mere continuance of working that not only the earning power of the factory is maintained, but also the capital value; and in a second class, that of undertakings so large and permanent as to afford a wide average of deterioration and renewal over the whole plant. In the conduct of works there is often a natural tendency to charge off for depreciation in proportion to the profits rather than to the deterioration, and where such a tendency is crystallized into action, the amount charged off being large in a year when the profits are large, the cost of production, should such amount be considered as an element in it, would be thrown out of legitimate proportion.

In the case of a very large plant, where there is a considerable annual outlay for renewals as well as for repairs, such expenditure, if charged to profit, may fairly balance the average deterioration of the whole;

but to secure this there should be a very ample margin, through the increase of the plant every year, for without this there would be a risk that a gradual lessening of the total value of buildings or plant would take place, ultimately involving considerable expenditure to restore its earning capacity, and this great expenditure, if added to the cost of production, would again distort the legitimate proportions thereof. In the -accounts of a plant it is difficult, even for those engaged in its management, always to distinguish between the expenditure for renewals chargeable to capital and that due to deterioration; and to those outside the management it is quite impossible without careful investigation. Actual additions to the size or capacity of a plant should be largely reckoned as increasing the fixed capital, but such an increase may be wholly or partially neutralized by deterioration. There are various methods of estimating the depreciation of a factory or plant, but it may be said in regard to any of them that the object in view is so to treat the nominal capital in the books of account that it shall always represent as nearly as possible the real value. The most effectual method of securing this would be, if it were feasible, to revalue everything at stated intervals, and to charge off whatever loss such valuations might reveal without regard to any prescribed rate. By such a plan the deterioration due to a period of constant working and of great profits, or to an average or idle year, might be properly allotted.

Such a system is adopted oftenest in factories or works where the trade and plant are of so simple or uniform a kind as to allow it without difficulty. In some manufactories there are a few chief items of plant which are more important than the rest, and whose condition and value therefore need special consideration. But as a rule it will be found that charging repairs to cost of production, and great extensions or increase of capacity to capital, serves the best economic purpose in securing the legitimate cost of production.

In the case of machinery, deterioration depends on so many circumstances, some of which relate to the machine itself, and others to the mode of using it, that it is difficult to establish a just and uniform rate of depreciation which could with integrity be chargeable to the cost of production. Sometimes a machine as a whole may continue serviceable, while important parts may become obsolete. Thus, in an iron rolling mill, new rolls may be cut to produce a certain pattern of bar iron, and if this pattern be of a standard shape and size, constantly in demand, depreciation may be based on its probable durability and the number of tons of iron which the rolls will produce before they are worn out. If, on the other hand, the pattern be peculiar in shape or size, a higher rate of depreciation is necessary, and it may become proper to charge the whole cost of the rolls to the first output of bars. In this latter respect the rolls must be treated like foundery patterns, which are in some cases charged to one set of castings for which they have been specially made, and at another time, as stock or standard patterns, to

capital. There are numerous other industries where a large proportion of the cost of manufacture is for the design and patterns, and a due depreciation in value would become of great importance.

There is a very wide divergence of practice, even in well-managed - factories, as to the proper rate of depreciation for machinery. To be on the safe side a concern sometimes commences by charging off annually 10 per cent. from the cost of all machinery, especially when the concern is doing a profitable business. In other cases the records of many years' working may show that 21 per cent. is sufficient. In engineering factories the rate which will probably meet the depreciation will generally be found between 5 and 10 per cent. Where the work is of a moderate kind which does not strain the machines severely, and where the hours of working do not average more than sixty per week. 5 per cent. would generally suffice for machinery, cranes, and fixed plant of all kinds, excluding steam engines and boilers. Where there is a diversity of machinery and plant, as in a cotton mill, prominent cotton manufacturers, with many years' accounts to enable them to form a correct judgment, have informed the Department that 5 per cent. seems to be an appropriate rate to be added to cost of production when this method is resorted to; but such a rate would be quite insufficient for the machinery of a rolling mill. While a rate of 71 per cent. might be supposed sufficient for the first few years, say four, the valuation at the end of that period might show that some rate between 10 and 20 per cent. would be necessary to meet effectually the depreciation in value due to wear and tear, and to the fact that the machinery is likely to become old-fashioned.

Steam engines and boilers, if classed separately from the other machinery of a plant, would generally require a higher rate of depreciation, and a further separation would require that the boilers be given a rate higher than engines. The make of the boilers and engines would have much to do with the depreciation. In trades where steam engines, steam hammers, furnaces, and boilers form a large proportion of the total plant of machinery, they would have to be classed separately from the other machines, or the rate of depreciation for them should determine that for the whole; but it is often considered expedient to exclude from such a general rate of depreciation certain things, such as patterns and foundery boxes, or to class them separately. Where the depreciation is rapid, as in boilers and furnaces, the need for renewal forces itself on the attention of users, and the justice of charging expenditure on this account to profit becomes obvious, and of course to charge such to cost of production would be entirely wrong. From these considerations, and to avoid inharmonious and incongruous elements of cost, we have, to cover all contingencies and the variations of years, included repairs in the cost of production instead of undertaking to determine or accept any specified rates of depreciation by individual concerns.

The charges for insurance cannot justly be considered as an element of cost of production. It is a variable and often unknown quantity. Many proprietors prefer to carry their own insurance, while others prefer to place their risks in insurance companies. This takes the cost of insurance out of the catalogue of positive and universal elements of the cost of production.

The royalties paid to the owners of the soil in the cases of coal mines, ore mines, or limestone quarries, operated by persons other than the owners, have not been included, because such charges are not positive and universal, and must of necessity correspond to the interest charge of the operator who owns his mine. In other words, the royalty paid by the lessee represents what would be the interest on capital invested were he the owner, and is not considered as a legitimate charge against cost of production, although affecting profits or selling prices.

The charges for freight of product from the works to place of free delivery have not been included as one of the positive elements of the cost of production, because they are manifestly a part of the cost of selling the finished products, and the plans of this investigation could necessarily carry the product only to the point of finishing at the works. Moreover, such charges are variable, the products of many mills being sold free on board at mills, and of others at such a variety of points that no usable statement could by any possibility be obtained. This latter reason prevented the Department from showing among the additional or theoretical charges the comparative advantages of the several establishments in respect to their proximity to market.

Notwithstanding these considerations, there are many students of economic subjects, as already intimated, who regard some one or all of these elements—interest, insurance, depreciation, and royalties—as legitimate elements in arriving at the cost of production, and for that reason a separate tabulation of such data on them as came to hand is appended. It will be found, however, that in nearly all cases their influence upon the cost of a unit, like a ton of pig iron or a ton of steel rails, is so slight as not to invalidate the statements made in the tables where they have been excluded.

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COST OF PRODUCTION AS AFFECTED BY MARKET PRICE AND FREIGHT OF MATERIALS.

Another disturbing element in ascertaining exact cost of production is the market price at which materials are charged. A manufacturer of pig iron may also be the producer of the ore or coke, coal or limestone which he uses, or he may be the producer of some of these materials and a purchaser of others. If he is a purchaser he is entitled to charge as a legitimate element of cost what he has to pay in the market for the materials, and it sometimes occurs that where a manufacturer produces his own ore or other materials, he considers it perfectly legitimate in making up his cost to enter what he produces at the

market price he would have to pay for it provided he purchased. - This statement will often account for discrepancies in the cost as charged for different materials. The influence of this is more largely felt in the production of steel rails, where the fluctuation of prices of pig iron is great, as shown by the speculation in pig iron in Great Britain. It is extremely difficult to arrive at the specific elements of cost in the production of pig iron in Great Britain, on account of the constant gambling there in pig-iron warrants. This species of speculation has been carried to such a reckless extent that a measure has been introduced into parliament for regulating dealings in pig-iron warrants. measure aims at such speculative dealings, especially those characteristic of the Glasgow market, where it is no uncommon occurrence for operators to buy and sell enormous lines of warrants without possessing or desiring to possess a single ton of iron. Much harm has certainly at various periods been inflicted on the British iron trade as an industry by the wild gambling carried on by the iron rings, not alone through the destructive operations of bears but also through the injudicious proceedings of sanguine bulls (a). The influence of this species of speculation distorts prices and, of course, costs, and it has much to do with the irregularities noticed in the quotations of steel rails. This feature will be referred to again when discussing the cost of production of steelrails. The cost of production is also affected by the freight charges on the assemblage of raw materials like ore, coal, coke, etc. The cost of transporting ore, for instance, will vary as between two establishments located side by side and bringing their ore from the same mine. One establishment may have influence with the road by which rebates are obtained, while the other establishment, having no such influence, is obliged to pay the full official rates. While such conditions are not frequent, nevertheless in some cases they are disturbing elements in the attempt to arrive at exact cost of producing pig iron or steel.

FREIGHTS.

The cost of freight from the place of production to the point of free delivery or of sale has much to do, of course, with the iron trade as with all others. The Department, therefore, has taken pains to collect official data showing the freight rates from great points of production to points and ports of shipment, but as these freight rates relate to all kinds of iron and steel, the tables showing them are printed at the close of the analysis of the general tables, Part I, instead of being distributed under various specific products.

s The Economist, London, November 20, 1890.

DISTRICTS.

As a further means of preventing the identification of establishments as promised to manufacturers, the names of localities and even of states are omitted. For pig iron the United States is divided into two districts and Europe into two, and the facts tabulated by such districts. The actual and relative volume of production of pig iron in the different sections of this country, as reported at the eleventh census, may be seen from the following table:

PRODUCTION OF PIG IRON IN THE UNITED STATES AT THE ELEVENTH CENSUS.

Districts.	Tons of 2,0	00 pounds—ye	ar ending—
Distriction.	May 31, 1870.	May 31, 1880.	June 30, 1890.
New England states Middle states Southern states	1, 311, 649 134, 540	90, 957 2, 401, 093 350, 436	38, 781 5, 216, 591 1, 780, 909
For western states	2, 052, 821	995, 335 3, 200 8, 781-021	2, 522, 351 26, 147 9, 579, 779

From the foregoing statement it will be seen that the middle and western states, practically extending in one general system from east to west, are properly classed as the northern district, and are the great producers of pig iron, while the southern states, forming a division of the country by themselves and working under their own conditions, properly constitute the southern district. The northern district includes the states of Illinois, Indiana, Maryland, Michigan, Missouri, New York, Ohio, Pennsylvania, West Virginia, and Wisconsin, and work under what may be called the Pennsylvania system. The southern district, working on what might be denominated the Alabama system of producing iron, includes the states of Alabama, Georgia, Tennessee, and Virginia. Europe has been divided into two districts. the continent of Europe, which for the purposes of this report comprises Germany, Belgium, France, Italy, and Spain, and Great Britain, under which division we have facts for England, Scotland, and Wales, For products other than pig iron the division into districts in the United States is omitted, although continued for Europe.

THE VOLUME OF PRODUCTION OF PIG IRON, STEEL, ETC.

Many persons using this report on the cost of production of iron and steel, and the materials of which iron is made, will not have at hand the statistics of the annual volume of production of such materials. To meet their needs a series of tables on this subject is presented. These tables, beginning with the following and ending on page 25, are taken from reports compiled by Hon. James M. Swank, secretary of the American Iron and Steel Association. The reputation of Mr. Swank is a full guar-

antee of their accuracy. By these tables it will be seen that the United States in 1889 produced over 30 per cent. of the whole output of iron of the world; but the facts for 1890 show that this percentage has been increased, and that now the United States takes first rank among the iron-producing countries, her output being greater than that of any other country.

PRODUCTION OF PIG IRON IN THE UNITED STATES.

	Kinds of iron (tons of 2,000 pounds).							
Year.	Anthracite and mixed anthracite and coke.	Charcoal.	Coke and raw bituminous.	Total.				
854	339, 435	342, 298	54,485	736, 218				
855	381, 866	339, 922	62,390	784, 178				
856	443, 113	370, 470	69,554	883, 137				
857	390, 385	330, 321	77, 451	798, 157				
858	361, 430	285, 313	58, 351	705, 094				
859	471, 745	284, 041	84,841	840, 627				
860	519, 211	278, 331	122, 228	919, 770				
861	409, 229	195, 278	127, 037	731, 544				
862	470, 315	186, 660	130,687	787, 66				
863	577, 638	212, 005	157,961	947, 604				
864	684, 018	241, 853	210, 125	1, 135, 99				
865	479, 558	262, 342	189,682	931, 58				
806	749, 367	332, 580	268, 396	1, 350, 34				
867	798, 638	344, 341	318,647	1, 461, 62				
868	893, 000	370,000	340,000	1, 603, 00				
869	971, 150	392, 150	553, 341	1, 916, 64				
870	930, 000	365, 000	570,000	1, 865, 00				
871	956, 608	385, 000	570,000	1, 911, 60				
872	1, 369, 812	500, 587	984, 159	2, 854, 55				
873	1, 312, 754	577, 620	977,904	2, 868, 27				
874	1, 202, 144	576, 557	910,712	2, 689, 41				
875	908, 046	410, 990	947, 545	2, 266, 58				
876	794, 578	308, 649	990,009	2, 093, 23				
877	934, 797	317,843	1, 061, 945	2, 314, 58				
878	1,092,870	293, 399	1, 191, 092	2, 577, 36				
879	1, 273, 024	358, 873	1, 438, 978	3, 070, 87				
880	1,807,651	537,558	1, 950, 205	4, 295, 41				
881	1,734,462	638, 838	2, 268, 264	4, 641, 56				
882	2,042,138	697,906	2, 438, 078	5, 178, 12				
883	1, 885, 596	571,726	2, 689, 650	5, 146, 97				
884	1, 586, 453	458,418	2, 544, 742	4, 589, 61				
885	1, 454, 390	399, 844	2, 675, 635	4, 529, 86				
886	2,099,597	459,557	3, 806, 174	6, 365, 32				
887	2, 338, 389	578, 182	4, 270, 635	7, 187, 20				
888.	1, 925, 729	598, 789	4, 743, 989	7, 268, 50				
889	1,920,354	644, 300	5, 951, 425	8, 516, 07				
890	2,020,000	399,000	0, 001, 100	9, 569, 85				

PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL IN THE UNITED STATES.

20000	Tons of 2,000 pounds.							
Products.	1878.	1879.	1880.	1881.	1882.	1883.		
Pig iron	2, 577, 361	3, 070, 875	4, 295, 414	4, 641, 564	5, 178, 122	5, 146, 972		
Spregeleizen, included above	10, 674	13, 931	19, 603	21, 086	21, 963	24, 574		
All rolled iron	1, 555, 576	2, 047, 484	2, 332, 668	2, 643, 927	2, 493, 831	2, 348, 874		
	1, 232, 686	1, 627, 324	1, 838, 906	2, 155, 346	2, 265, 957	2, 283, 926		
	4, 396, 130	5, 011, 021	5, 370, 512	5, 791, 206	6, 147, 097	7, 762, 737		
Bessemer steel rails Open-hearth steel rails Iron rails	550, 398	683, 964	954, 460	1, 330, 302	1, 438, 155	1, 286, 554		
	9, 397	9, 149	13, 615	25, 217	22, 765	9, 186		
	322, 890	420, 160	493, 762	488, 581	227, 874	64, 954		
Rails of all kinds	882, 685	1, 113, 273	1, 461, 837	1, 844, 100	1, 688, 794	1, 360, 690		
Crucible steel ingots	42, 906	56, 780	72, 424	• 89, 762	85, 089	80, 455		
Open-hearth steel ingots Bessemer steel ingots Miscellaneous steel	36, 126 732, 225 8, 5-4	56, 200 928, 972 5, 464	112,953 1,203,173 8,465	146, 946 1, 539, 157 3, 047	1, 696, 450 3, 014	1, 654, 627 5, 598		
Steel of all kinds	819, 814	1, 047, 506	1, 397, 015	1, 778, 912	1, 945, 095	1, 874, 356		
Blooms from ore and pig iron	50, 045	62, 353	74, 589	84, 606	91, 293	74, 758		

INTRODUCTION. 1 PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL, ETC.—Concluded.

2.00	Tons of 2,000 pounds.							
Products.	1884.	1885.	1886.	1887.	1888.	1889.		
Pig iron Spiegeleisen, included above All rolled iron Rolled iron, excluding rails. Kegs of cut natis and spikes. Bessemer steel rails Open-bearth steel rails Iron rails Rails of all kinds	4, 589, 613 33, 893 1, 957, 307 1, 931, 747 7, 581, 379 1, 116, 621 2, 670 25, 560 1, 144, 851	4, 529, 869 34, 671 1, 804, 526 1, 789, 711 6, 698, 815 1, 074, 607 4, 793 14, 815 1, 094, 215	6, 365, 328 47, 982 2, 283, 622 2, 259, 943 8, 160, 973 1, 763, 667 5, 255 23, 679 1, 792, 601	7, 187, 206 47, 598 2, 588, 500 2, 565, 438 6, 908, 870 2, 354, 132 19, 203 23, 062 2, 396, 397	7, 268, 507 54, 769 2, 411, 654 2, 397, 402 6, 493, 591 1, 552, 631 5, 261 14, 252 1, 572, 144	#8, 516, 079 85, 823 2, 586, 385 2, 576, 127 5, 810, 758 1, 691, 264 3, 346 10, 258 1, 704, 867		
Crucible steel ingots Open-hearth steel ingots Bessemer steel ingots	59, 662 131, 617 1, 540, 595	64, 511 149, 381 1, 701, 762	80, 609 245, 250 2, 541, 493	84, 421 360, 717 3, 288, 357	78, 713 352, 036 2, 812, 500	84, 969 419, 488 3, 281, 829		
Miscellaneous steel	5, 111 1, 736, 985 57, 005	1, 696 1, 917, 350 41, 700	2, 651 2, 870, 003 41, 909	6, 265 3, 739, 760 43, 306	3, 247, 373 39, 875	5, 734 43, 792, 020 36, 260		

a The production of pig iron for the census year 1890 was 9,569,850 tons, and the production of steel of all kinds for the same year, 4,466,928 tons.

PRODUCTION OF ROLLED IRON, NOT INCLUDING ROLLED STEEL, IN THE UNITED STATES.

775	Ton	s of 2,000 pou	nds.		Ton	s of 2,000 pour	nda.
Year.	Iron rails.	rails. Other rolled iron. Total.	Year.	Iron rails.	Other rolled iron.	Total.	
1864	335, 369 356, 292 430, 778 459, 558 499, 499 583, 936 586, 000 737, 483 905, 930 761, 062 584, 469 501, 649	536, 958 500, 048 595, 311 579, 838 598, 286 642, 420 705, 000 710, 000 941, 992 1, 076, 368 1, 110, 147 1, 097, 867	872, 327 856, 340 1, 026, 089 1, 039, 396 1, 097, 775 1, 226, 356 1, 291, 000 1, 447, 483 1, 847, 922 1, 837, 430 1, 694, 616 1, 599, 516	1877 1878 1879 1880 1881 1882 1883 1884 1885 1884 1885 1886	332, 540 322, 890 420, 160 493, 762 488, 581 1227, 874 64, 954 25, 560 14, 815 23, 679 23, 662 14, 252	1, 144, 219 1, 232, 686 1, 627, 324 1, 838, 906 2, 155, 346 2, 265, 957 2, 283, 920 1, 931, 747 1, 789, 711 2, 259, 943 2, 565, 438 2, 397, 402	1, 476, 756 1, 555, 576 2, 047, 484 2, 332, 668 2, 643, 927 2, 493, 831 1, 957, 307 1, 804, 526 2, 283, 622 2, 583, 622 2, 584, 526

PRODUCTION OF ALL KINDS OF STEEL IN THE UNITED STATES.

	Tons of 2,000 pounds.							
Years.	Bessewer steel ingots.	Open- hearth steel ingots.	Crucible steel ingots.	All other steel.	Total.			
1868	8, 500		a 21,500		30,000			
869	12,000	1,000	a 22,000		35, 000			
870	42,000	1, 500	a 33, 500		77,000			
871	45,000	2,000	a 35, 000		82,000			
872	120, 108	3,000	29, 260	7,740	160, 106			
873	170, 652	3, 500	34, 786	13, 714	222, 652			
874	191, 933	7,000	36, 328	6, 353	241, 614			
875	375, 517	9,050	39, 401	12, 607	436, 575			
876	525, 996	21, 490	39, 382	10, 306	597, 174			
877	560, 587	25, 031	40, 430	11, 924	637, 972			
878	732, 226	36, 126	42, 906	8, 556	819, 814			
879	928, 972	56, 290	56, 780	5, 464	1, 047, 506			
1886	1, 203, 173	112, 953	72, 424	8, 465	1, 397, 015			
1881		146, 946	89, 762	3, 047	1, 778, 912			
1882	1, 696, 450	160, 542	85, 089	3, 014	1, 945, 095			
1883	1, 654, 627	133, 679	80, 455	5, 598	1, 874, 356			
884	1, 540, 595	131, 617	59, 662	5, 111	1, 736, 985			
.885		149, 381	64, 511	1, 696	1, 917, 350			
886	2, 541, 493		80, 609	2,651	2, 870, 003			
1887	3, 288, 357	360, 717	84, 421	6, 265	3, 739, 760			
1888		352, 036	78, 713	4, 124	8, 247, 373			
1889	3, 281, 829	419, 488	84, 969	5, 734	3, 792, 020			

a Including all other steel.

H. Ex. 265-2

antee of their accuracy. By these tables it will be seen that the United States in 1889 produced over 30 per cent. of the whole output of iron of the world; but the facts for 1890 show that this percentage has been increased, and that now the United States takes first rank among the iron-producing countries, her output being greater than that of any other country.

PRODUCTION OF PIG IRON IN THE UNITED STATES.

	Kinds of iron (tons of 2,000 pounds).							
Year.	Anthracite and mixed anthracite and coke.	Charcoal.	Coke and raw bituminous.	Total.				
1854	339, 435	342, 298	54, 485	736, 218				
1855		339, 922	62, 390	784, 178				
1856		370,470	69, 554	883, 137				
1857		330, 321	77, 451	798, 157				
1858		285, 313	58, 351	705, 094				
1859		284, 041	84, 841	840, 627				
1860		278, 331	122, 228	919, 770				
1861		195, 278	127, 037	731, 544				
1862		186, 660	130,687	787, 663				
1863	577, 638	212, 005	157,961	947, 604				
1864		241, 853	210, 125	1, 135, 996				
1865	479, 558	262, 342	189,682	931, 582				
1866	749, 367	332, 580	268, 396	1, 350, 343				
1867		344, 341	318,647	1, 461, 626				
1868		370,000	340,000	1, 603, 000				
1869		392, 150	553, 341	1, 916, 641				
1870		365, 000	570,000	1, 865, 000				
1871		385, 000	570,000	1, 911, 608				
1872		500, 587	984, 159	2, 854, 559				
1873		577, 620	977,904	2, 868, 278				
1874		576, 557	910,712	2, 689, 413				
1875		410, 990	947, 545	2, 266, 581				
1876	794, 578	308, 649	990,009	2, 093, 236				
1877		317, 843	1,061,945	2, 314, 585				
1878		293, 309	1,191,092	2, 577, 361				
1879		358, 873	1,438,978	3, 070, 875				
1880		537, 558	1,950,205	4, 295, 414				
1881		638, 838	2, 268, 264	4, 641, 564				
1882		697, 906	2,438,078	5, 178, 12				
1883		571, 726	2,689,650	5, 146, 973				
1884		458, 418	2,544,742	4, 589, 613				
1885		399, 844	2,675,635	4, 529, 869				
1886		459, 557	3, 806, 174	6, 365, 325				
1887		578, 182	4, 270, 635	7, 187, 200				
1888		598, 789	4,743,989	7, 268, 507				
1889		644, 300	5,951,425	8, 516, 075				
1800				9, 569, 836				

PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL IN THE UNITED STATES.

and the same of the	Tons of 2,000 pounds.								
Products.	1878.	1879.	1880.	188L	1882.	1883.			
Pig iron Sriegeleisen, included above All rolled iron. excluding rails. Kegs of cut nails and spikes. Bessemer steel rails. Open-hearth steel rails. Iron rails Rails of all kinds. Crucible steel ingots	2, 577, 361 10, 674 1, 555, 576 1, 232, 686 4, 396, 130 550, 398 9, 397 322, 890 882, 685 42, 906	3, 070, 875 13, 931 2, 047, 484 1, 627, 324 5, 011, 021 683, 964 9, 149 420, 160 1, 113, 273 56, 780	4, 295, 414 19, 603 2, 332, 668 1, 838, 906 5, 370, 512 954, 460 13, 615 493, 762 1, 461, 837 72, 434	4, 641, 564 21, 086 2, 643, 927 2, 155, 346 5, 791, 206 1, 330, 302 25, 217 48R, 581 1, 844, 100 89, 762	5, 178, 122 21, 963 2, 403, 831 2, 265, 957 6, 147, 097 1, 438, 155 227, 874 1, 688, 794 85, 089	5, 146, 972 24, 574 2, 348, 874 2, 283, 92 7, 762, 737 1, 286, 554 9, 186 64, 934 1, 360, 691 80, 453			
Open-hearth steel lugots Bessemer steel ingots Miscellaneous steel	36, 126 732, 225 8, 5.4	56, 290 928, 972 5, 464	112, 953 1, 203, 173 8, 465	146, 946 1, 539, 157 3, 047	1,696,450 3,014	133, 673 1, 654, 627 5, 596			
Steel of all kinds Blooms from ore and pig iron	819, 814 50, 045	1, 047, 506 62, 353	1, 397, 015 74, 589	1, 778, 912 84, 606	1, 945, 095 91, 293	1, 874, 356 74, 756			

PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL, ETC.—Concluded.

	Tons of 2,000 pounds.							
Producta.	1884.	1885.	1886.	1887.	1888.	1889.		
Pig iron Spiegeleisen, included above All rolled iron Rolled iron, excluding rails. Kegs of cut natls and spikes. Bessemer steel rails Open-bearth steel rails Iron rails Rails of all kinds Crucible steel ingots Open-bearth steel ingots Bessemer ateel ingots Miscelluneous steel Steel of all kinds Blooms from ore and pig iron	4, 589, 613 33, 893 1, 957, 307 1, 931, 747 7, 581, 379 1, 116, 621 2, 670 25, 560 1, 144, 851 59, 662 131, 617 1, 540, 565 5, 111 1, 736, 985 57, 005	4, 529, 869 34, 671 1, 804, 526 1, 789, 526 1, 6696, 815 1, 074, 607 4, 793 14, 815 14, 938 1, 904, 215 149, 381 1, 701, 762 1, 917, 350 41, 700	6, 365, 328 47, 982 2, 283, 622 2, 259, 943 8, 160, 973 1, 763, 667 6, 255 23, 679 1, 792, 601 80, 609 245, 259 2, 541, 492 2, 651 2, 870, 003 41, 909	7, 187, 206 47, 598 2, 588, 500 2, 568, 870 2, 354, 132 19, 203 23, 062 2, 396, 397 360, 717 3, 288, 357 6, 265 3, 739, 760 43, 306	7, 268, 507 54, 769 2, 411, 654 2, 397, 65, 493, 591 1, 552, 631 14, 252 1, 572, 144 78, 713 352, 036 2, 812, 500 4, 124 3, 247, 373 39, 875	a 8, 516, 079 83, 823 2, 586, 385 2, 576, 127 5, 810, 758 1, 691, 248 1, 704, 863 1, 704, 863 84, 969 419, 488 3, 281, 829 43, 792, 020 36, 263		

a The production of pig iron for the cens us year 1890 was 9,569,850 tons, and the production of steel of all kinds for the same year, 4,466,925 tons.

PRODUCTION OF ROLLED IRON, NOT INCLUDING ROLLED STEEL, IN THE UNITED STATES.

	Ton	s of 2,000 pou	nds.		Ton	s of 2,000 pou	nds.
Year.	Iron rails.	Other rolled iron.		Year.	Iron rails.	Other rolled iron.	Total.
1884 1865	335, 369 356, 292	536, 958 500, 048	872, 327 856, 340	1877	332,540 322,890	1, 144, 219 1, 232, 686	1, 476, 759 1, 555, 576
1866 1867	430, 778 459, 558 499, 489	595, 311 579, 838 598, 286	1, 026, 089 1, 039, 396 1, 097, 775	1879 1880 1881	420,160 493,762 488,581	1, 627, 324 3, 838, 906 2, 155, 346	2, 047, 484 2, 332, 668 2, 643, 927
1869 1870	583, 936 586, 000 737, 483	642, 420 705, 000 710, 000	1, 226, 356 1, 291, 000 1, 447, 483	1882 1883 1884	227, 874 64, 954 25, 560	2, 265, 957 2, 283, 920 1, 931, 747	2, 493, 831 2, 348, 874 1, 957, 307
1872 1873 1874	905, 930 761, 062 584, 469	941, 992 1, 076, 368 1, 110, 147	1, 847, 922 1, 837, 430 1, 694, 616	1885 1886 1887	14,815 23,679 23,062	1,789,711 2,259,943 2,565,438	1, 804, 526 2, 283, 622 2, 588, 500
1875 1876	501, 649 467, 168	1,097,867 1,042,101	1, 599, 516 1, 509, 269	1888	14,252 10,258	2, 397, 402 2, 576, 127	2, 411, 654 2, 586, 385

PRODUCTION OF ALL KINDS OF STEEL IN THE UNITED STATES.

	Tons of 2,000 pounds.						
Years.	Bessemer steel ingots.	Open- hearth steel ingots.	Crucible steel ingots.	All other steel.	Total.		
1868 1869 1870 1871 1871 1871 1872 1873 1874 1875 1876 1887 1878 1880 1881 1882 1883 1884 1885	8, 500 12, 000 42, 000 45, 000 120, 108 170, 652 191, 933 375, 517 525, 996 560, 587 732, 226 928, 972 1, 203, 173 1, 539, 157 1, 696, 450 1, 654, 627 1, 540, 595 1, 701, 762 2, 541, 493 3, 288, 357	1,000 1,500 2,000 3,000 3,500 9,050 21,490 25,031 36,126 56,290 112,953 146,946 160,542 133,679 131,617 149,381 245,250 560,717	a 21, 500 a 22, 000 a 35, 600 29, 260 34, 786 36, 328 39, 401 30, 382 40, 430 42, 906 56, 780 72, 424 89, 762 85, 682 86, 455 50, 662 64, 511 80, 602 84, 421	7, 740 13, 714 6, 353 12, 607 10, 306 11, 924 8, 556 5, 464 8, 465 3, 047 3, 014 5, 598 5, 111 1, 698 2, 651 6, 265	30, 000 35, 000 77, 000 82, 000 160, 108 222, 652 241, 614 436, 575 597, 174 637, 972 819, 814 1, 947, 915 1, 778, 912 1, 945, 945, 945, 945, 945, 945		
1888	2, 812, 500 3, 281, 829	352, 038 419, 488	78, 713 84, 969	4, 124 5, 734	3, 247, 373 3, 792, 020		

a Including all other steel.

H. Ex. 265-2

antee of their accuracy. By these tables it will be seen that the United States in 1889 produced over 30 per cent. of the whole output of iron of the world; but the facts for 1890 show that this percentage has been increased, and that now the United States takes first rank among the iron-producing countries, her output being greater than that of any other country.

PRODUCTION OF PIG IRON IN THE UNITED STATES.

	Kin	ds of iron (tor	as of 2,000 pound	8).
Year.	Anthracite and mixed anthracite and coke.	Charcoal.	Coke and raw bituminous.	Total.
1854	339, 435	342, 298	54, 485	736, 218
1855	381, 866	339, 922	62, 390	784, 178
1856	443, 113	370, 470	69, 554	883, 137
1857	390, 385	330, 321	77, 451	798, 157
1858	361, 430	285, 313	68, 351	705, 094
1859	471, 745	284, 041	84, 841	840, 627
1860	519, 211	278, 331	122, 228	919, 770
	409, 229	195, 278	127, 037	731, 544
1861				
1862	470, 315	186, 660	130, 687	787, 66:
1863	577, 638	212, 005	157, 961	947, 60
1864	684, 018	241, 853	210, 125	1, 135, 99
1865	479, 558	262, 342	189, 682	931, 58
1866	740, 367	332, 580	268, 396	1, 350, 343
1867	798, 638	344, 341	318,647	1, 461, 62
868	893, 000	370,000	340,000	1, 603, 00
1869	971, 150	392, 150	553, 341	1, 916, 64
870	930, 000	365, 000	570,000	1, 865, 00
871	956, 608	385,000	570,000	1, 911, 60
872	1, 369, 812	500, 587	984, 159	2, 854, 55
873	1, 312, 754	577, 620	977,904	2, 868, 27
874	1, 202, 144	576,557	910,712	2, 689, 41,
875	908, 046	410,990	947,545	2, 266, 58
876	794, 578	308, 649	990,009	2, 093, 23
877	934, 797	317, 843	1, 061, 945	2, 314, 58
878	1,092,870	293, 399	1, 191, 092	2, 577, 36
879	1, 273, 024	358, 873	1, 438, 978	3, 070, 87
880	1, 807, 651	537,558	1, 950, 205	4, 295, 41
881	1,734,462	638, 838	2, 268, 264	4, 641, 56
882	2,042, 138	697, 906	2, 438, 078	5, 178, 12
883	1, 885, 596	571,726	2, 689, 650	5, 146, 97
884	1, 586, 453	458,418	2, 544, 742	4, 589, 61
885	1, 454, 390	399, 844	2, 675, 635	4, 529, 86
886	2,099,597	459,557	3, 806, 174	6, 365, 32
887	2, 338, 389	578, 182	4, 270, 635	7, 187, 20
	1, 925, 729	598, 789	4, 743, 989	7, 268, 50
888				
1889	1,920,354	644,300	5, 951, 425	8, 516, 07
1800	***********	************		9, 569, 83

PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL IN THE UNITED STATES.

	Tons of 2,000 pounds.							
Producta.	1878.	1879.	1880.	188L.	1882.	1883.		
Pig iron	2, 577, 361 10, 674	3, 070, 875 13, 931	4, 295, 414 19, 603	4, 641, 564 21, 086	5, 178, 122 21, 963	5, 146, 972		
'all rolled iron	1, 555, 576	2, 047, 484	2, 332, 668	2, 643, 927	2, 493, 831	2, 348, 874		
Rolled iron, excluding rails. Kegs of out nails and spikes.	1, 232, 686 4, 396, 130	1, 627, 324 5, 011, 021	1, 838, 906 5, 370, 512	2, 155, 346 5, 791, 206	2, 265, 957 6, 147, 097	2, 283, 920 7, 762, 737		
Bessemer steel rails Open-hearth steel rails	550, 398 9, 397	683, 964 9, 149	954, 460 13, 615	1, 330, 302 25, 217	1, 438, 155 22, 765	1, 286, 554 9, 186		
Iron rails	322, 890	420, 160	493, 762	488, 581	237, 874	64, 954		
Rails of all kinds Crucible steel ingots	882, 685 42, 906	1, 113, 273 56, 780	1, 461, 837 72, 424	1, 844, 100	1, 688, 794 85, 089	1, 360, 694 80, 453		
Open-hearth steel ingota Bessemer steel ingots	36, 126 732, 929	56, 290 928, 972	112, 953 1, 203, 173	1, 539, 157	160, 542 1, 696, 450	133, 679		
Miscellaneous steel	8, 5.m	5, 464	8, 465	3, 047	3, 014	1, 654, 627 5, 598		
Steel of all kinds	819, 814 50, 045	1, 017, 506 62, 353	1, 397, 015 74, 589	1, 778, 912 84, 606	1, 945, 095 91, 293	1, 874, 356 74, 758		

PRODUCTION OF LEADING PRODUCTS OF IRON AND STEEL, ETC.—Concluded.

200			*			
Products.	1884.	1885.	1886.	1887.	1888.	1889.
Pig iron Spiegeleisen, included above	4, 589, 613	4, 529, 869 34, 671	6, 365, 328 47, 983	7, 187, 206 47, 598	7, 268, 507 54, 769	a 8, 516, 079 85, 823
All rolled iron	1,957,307	1, 804, 526 1, 789, 711	2, 283, 622 2, 259, 943	2, 588, 500 2, 565, 438	2, 411, 654 2, 397, 402	2, 586, 385 2, 576, 127
Kegs of out nails and spikes.	7,581,379 1,116,621	6, 696, 815 1, 074, 607	8, 160, 973 1, 763, 667	6, 908, 870 2, 354, 132	6, 493, 591 1, 552, 631	5, 810, 758 1, 691, 264
Open-bearth steel rails	2, 670	4, 793	5, 255	19, 203	5, 261 14, 252	3, 346
Rails of all kinds	25, 560 1, 144, 851	1, 094, 215	23, 679 1, 792, 601	23, 062 2, 396, 397	1, 572, 144	1, 704, 865
Crucible steel ingots Open-hearth steel ingots	59, 662 131, 617	64, 511 149, 381	80, 609 245, 250	84, 421 360, 717	78, 713 352, 036	84, 969 419, 488
Bessemer steel ingota Miscellaneous steel	1,540,595 5,111	1, 701, 762 1, 696	2, 541, 493 2, 651	3, 288, 357 6, 265	2, 812, 500 4, 124	3, 281, 825 5, 734
Steel of all kinds	1,736,985 57,005	1, 917, 350 41, 700	2, 870, 003	3, 739, 760 43, 306	3, 247, 373 39, 875	43, 792, 020 36, 260

a The production of pig iron for the cens us year 1890 was 9,569,850 tons, and the production of steel of all kinds for the same year, 4,466,926 tons.

PRODUCTION OF ROLLED IRON, NOT INCLUDING ROLLED STEEL, IN THE UNITED STATES.

	Ton	s of 2,000 pou	nds.		Tons of 2,000 pounds.			
Year.	Iron rails.	Other rolled iron.	Total.	Year.	Iron rails. Other rolled iron.		Total.	
1864	335, 369 356, 292 430, 778 459, 558 499, 489	536, 958 500, 048 595, 311 579, 838 598, 286	872, 327 856, 340 1, 026, 089 1, 039, 396 1, 097, 775	1877 1878 1879 1880	332,540 322,890 420,160 493,762 488,581	1, 144, 219 1, 232, 686 1, 627, 324 1, 838, 906 2, 155, 346	1, 476, 759 1, 555, 576 2, 047, 484 2, 332, 668 2, 643, 927	
1869	583, 936 586, 000 737, 483 905, 930 761, 062	642, 420 705, 000 710, 000 941, 992 1, 076, 368	1, 226, 356 1, 291, 000 1, 447, 483 1, 847, 922 1, 837, 430	1883 1884 1885 1886	227, 874 64, 954 25, 560 14, 815 23, 679	2, 265, 957 2, 283, 920 1, 931, 747 1, 789, 711 2, 259, 943	2, 493, 83 2, 348, 87 1, 957, 30 1, 804, 52 2, 283, 62	
1874 1875 1876	584, 469 501, 649 467, 168	1, 110, 147 1, 097, 867 1, 042, 101	1, 694, 616 1, 599, 516 1, 509, 269	1887 1888 1889	23, 062 14, 252 10, 258	2, 565, 438 2, 397, 402 2, 576, 127	2, 588, 500 2, 411, 65- 2, 586, 38	

PRODUCTION OF ALL KINDS OF STEEL IN THE UNITED STATES.

A		Tone	of 2,000 po	unds.	
Years.	Bessemer steel ingots.	Open- hearth steel ingots.	Crucible steel ingots.	All other steel.	Total.
1868 1869 1870 1871 1872 1873 1874 1875 1877 1877 1878 1877 1878 1879 1889 1881	8, 500 12, 000 42, 000 45, 000 120, 108 170, 652 191, 933 375, 517 525, 996 560, 587 732, 226 928, 972 1, 203, 173 1, 539, 157 1, 696, 450 1, 654, 627	1, 000 1, 500 2, 000 3, 000 3, 500 7, 000 9, 050 21, 490 25, 031 36, 126 56, 290 112, 963 146, 946 160, 542 133, 679 131, 617	a 21, 500 a 22, 000 a 35, 500 a 35, 500 29, 260 34, 786 36, 328 39, 401 39, 382 40, 430 42, 906 56, 780 72, 424 89, 762 85, 089 80, 455 50, 662	7, 740 13, 714 6, 353 12, 607 10, 306 11, 924 8, 556 5, 464 8, 465 2, 047 3, 014 5, 598 5, 111	\$0,000 35,000 77,000 82,000 160,108 222,652 241,614 436,573 597,175 819,814 1,047,500 1,397,015 1,778,915 1,945,085
1885 , , , , , , , , , , , , , , , , , ,		149, 381 245, 250 360, 717 352, 036 419, 488	64, 511 80, 609 84, 421 78, 713 84, 969	1, 696 2, 651 6, 265 4, 124 5, 734	1, 917, 350 2, 870, 003 3, 739, 760 3, 247, 373 3, 792, 020

s Including all other steel.

H. Ex. 265-2

In 1863 the production of all kinds of steel in the United States was 9,044 tons; in 1864, 10,369 tons; in 1865, 15,262 tons; in 1866, 18,973 tons; and in 1867, 22,000 tons, including 3,000 tons of Bessemer steel ingots. Bessemer steel was first made in the United States in the fall of 1864. The manufacture of open-hearth steel in the United States was commenced in December, 1868.

PRODUCTION OF BLOOMS AND BILLETS.

[The production in the United States of wrought iron from ore in forges is now almost entirely confined to the Lake Champlain district of New York. Blooms from pig and scrap iron are made chiefly in Pennsylvania.]

	Tons of 2,000 pounds.					Tons of 2,000 pounds.					
Year.	Ore blooms and bil- lets made in New York.	Total make of ore blooms and bil- lets.	Pig and scrap blooms made in Pennsyl- vania.	Total make of pig and scrap blooms,	Year.	Ore blooms and bil- lets made in New York.	Total make of ore blooms and bil- lets.	Pig and scrap blooms made in Pennsyl- vania.	Total make of pig and scrap blooms.		
1875 1876 1877 1878 1879 1880 1881	20,202 23,466 22,829 27,200	24, 416 20, 784 24, 227 24, 139 30, 282 40, 652 45, 309 48, 354	19, 032 13, 401 16, 517 15, 121 23, 956 24, 319 28, 342 29, 408	24, 827 23, 844 23, 073 25, 906 32, 071 33, 937 39, 237 42, 939	1883 1884 1885 1886 1887 1888	27, 745 18, 981 15, 507 15, 043 14, 050	35, 237 29, 789 19, 887 15, 878 15, 088 14, 088 12, 407	28, 190 19, 992 15, 462 20, 836 21, 982 19, 081 18, 504	- 39, 521 27, 216 21, 813 26, 031 28, 218 25, 787 23, 853		

The production of both products from 1865 to 1889 has been as follows:

Year.	Tens of 2,000 pounds.	Year.	Tons of 2,000 pounds.	Year.	Tons of 2,000 pounds.
1865	63, 977 73, 555 73, 073 75, 200 69, 500 62, 259 63, 000 58, 000 62, 564	1874	61, 670 49, 243 44, 628 47, 300 50, 045 62, 353 74, 589 84, 606 91, 293	1883 1884 1885 1886 1887 1888 1888	74, 758 57, 005 41, 700 41, 909 43, 306 39, 875 36, 260

THE PRODUCTION OF STEEL IN THE UNITED STATES AND GREAT BRITAIN.

[The production of Beasemer steel ingots (including Clapp-Griffiths steel ingots) and rails in Great Britais in the last thirteen years, compared with the production of the United States during the same period, was as follows. In the ingot tournage for the United States for 1889 is also included the small quantity of Robert-Beasemer steel made in that year.]

Year.	United Stat 2,240 po		Great Britain (tons of 2,240 pounds).		
	Ingota.	Rails.	Ingots.	Rails.	
1877 1878 1879 1880 1881 1882 1883 1894 1895 1895 1898 1898	500, 524 653, 773 829, 439 1, 074, 262 1, 374, 247 1, 514, 687 1, 477, 345 1, 375, 531 1, 519, 430 2, 269, 190 2, 936, 033 2, 511, 101 2, 930, 204	385, 865 491, 427 610, 682 852, 196 1, 187, 770 1, 284, 067 1, 148, 709 996, 983 959, 471 1, 574, 703 2, 101, 904 1, 386, 277 1, 510, 057	750, 000 807, 527 834, 511 1, 044, 382 1, 441, 719 1, 673, 649 1, 553, 3-J 1, 299, 676 1, 304, 127 1, 570, 520 2, 089, 403 2, 032, 794 2, 140, 793	508, 400 622, 390 520, 231 732, 910 1, 023, 740 1, 235, 785 1, 097, 174 784, 968 705, 583 730, 343 1, 021, 847 979, 083 943, 048	

The United States has for many years made more Bessemer steel ingots and Bessemer steel rails than Great Britain. If we consider all the kinds of steel which are made by the two great steel-making countries above mentioned, the United States was also ahead of its European rival in 1886 and 1887. In 1888 and 1889, however, Great Britain again asserted its supremacy. She now excels as a steel producer, because of her large annual production of open-hearth steel.

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PRODUCTION AND PRICES OF BESSEMER STREL RAILS IN THE UNITED STATES.

[The following table shows the annual production in gross tons of Bessemer steel rails in the United States since the beginning of their manufacture in commercial quantities in 1867, together with the average annual price at which they have been sold at works in Ponnsylvania.]

Year.	Production (tons of 2,240 pounds).	Price in currency.	Average price of gold.	Year.	Production (tons of 2,240 pounds).	Price in currency.	Average price of gold.
1897	2, 277 6, 451 8, 616 20, 257 34, 152 82, 991 115, 192 129, 414 259, 699 285, 865 481, 427	\$166, 00 158, 59 132, 25 100, 75 102, 50 112, 00 120, 50 94, 25 68, 75 59, 25 45, 50	128 140 136 1:5 112 112 113 113 111 110 105	1870 1880 1881 1882 1883 1884 1885 1886 1886 1887 1848 1889	610, 682 852, 106 1, 187, 770 1, 284, 067 1, 148, 709 906, 983 959, 471 1, 574, 703 2, 101, 904 1, 384, 277 1, 516, 057	\$48. 25 67. 50 61. 13 48. 50 37. 75 30. 75 28. 50 34. 50 37. 08 29. 83 29. 25	100 100 100 100 100 100 100 100 100

The lowest average annual price at which Bessemer steel rails have been sold in this country was reached in 1885, namely, \$28.50, but sales were made at still lower figures in 1884, 1885, 1888, and 1889, as low as \$26 and \$27.

PRODUCTION AND PRICES OF IRON RAILS IN THE UNITED STATES.

[In the following table is given the production in tons of 2,000 pounds, and prices per ton of 2,240 pounds of standard sections of iron rails in the United States.]

Year.	Tons (2.009 pounds).	Average price per ton of 2,240 pounds.	Үеаг .	Tons (2,000 pounds).	Average price per ton of 2,240 pounds.	Year.	Tona (2,000 pounds).	Average price per ton of 2,240 pounds.
1840	24, 318 44, 063 50, 603 62, 478 87, 764 106, 016 138, 018 161, 918 163, 712 195, 454 205, 038 128, 818	\$53. 88 47. 88 45. 63 48. 38 77. 25 80. 13 62. 88 64. 38 64. 25 50. 00 49. 38 48. 00 42. 38 41. 75	1863 1864 1865 1866 1868 1869 1870 1871 1872 1873 1874 1875 1876	275, 768 335, 369 356, 292 430, 778 459, 558 499, 489 583, 936 586, 000 737, 483 905, 930 761, 062 584, 469 561, 649 467, 168	\$76.88 126.00 96.63 86.75 88.77.25 77.25 70.38 85.19 76.87 68.75 64.75	1877	322, 540 322, 800 420, 160 493, 762 488, 581 227, 874 64, 954 25, 560 14, 815 22, 679 23, 062 14, 252 10, 258	\$25. 25 23. 75 41. 25 49. 25 47. 13 45. 50 (a)

a Since the beginning of 1883 the manufacture of iron rails in the United States has been almost certiraly superseded by the manufacture of steel rails. Such iron rails as have since been made in this country have been chiefly street rails and light rails for mines and tramways, the price of which, if added to the above table, would be misleading. As there has been virtually no demand for standard sections of iron rails since 1882, there have been no market quotations for them since that year.

PRODUCTION OF ALL KINDS OF RAILS IN THE UNITED STATES.

[The production of all kinds of rails in the United States since 1849 has been as follows. Prior to 1867 all rails in this country were made of iron.]

		· Tone	of 2,000 por	ands.	3 100
Year.	Bessemer steel rails.	Open- hearth steel rails.	Total steel rails.	Iron rails, all kinds.	Total iron and steel.
1849				24, 318	
850				44, 083	
851				50, 603	
852				62,478	
1853				87, 864	
1854				108, 016	
1855				138, 674	
1856				180, 018	
1857				161, 918	
1858				163, 712	
1859				195, 454	
			**********	205, 038	
1860					
	**********	************	*********	189, 818	*********
1862		**********	**********	213, 912	
1863		*********	********	275, 768	
1864		**********		335, 369	************
1865		************		356, 292	
1866				430, 778	*********
1867	2,550		2, 550	459, 558	462, 108
1868	7, 225		7, 225	499, 489	506, 714
1869	9, 650		9, 650	583, 936	593, 586
1870	34, 600		34, 000	586, 090	620, 600
1871	38, 250		38, 250	737, 483	775, 733
1872	94, 070		94, 070	905, 930	1, 000, 000
1873	129, 015		129, 015	761, 062	890, 07
1874	144, 944		144, 944	584, 469	729, 413
1875	290, 863		290, 863	501, 649	792, 513
1876	412, 461		412, 461	467, 168	879, 629
1877	432, 169		432, 169	332, 540	764, 709
1878	550, 398	9,397	559, 795	322, 890	882, 68
1879	683, 964	9, 149	693, 113	420, 160	1, 113, 27
1880	954, 460	13,615	968, 075	493, 762	1, 461, 83
	1, 330, 302	25, 217	1, 355, 519	488, 581	1, 844, 10
1881		22, 765	1, 460, 920	227, 874	1, 688, 79
1882	1, 438, 155				
1883		9, 186	1, 295, 740	64, 954	1, 360, 69
1884		2,670	1, 119, 291	25, 560	1, 144, 85
1885	1, 074, 607	4,793	1, 079, 400	14, 815	1, 094, 21
1886	1, 763, 667	5, 255	1, 768, 922	23, 679	1, 792, 60
1887		19, 203	2, 373, 335	23, 062	2, 396, 39
1888		5, 261	1, 557, 892	14, 252	1, 572, 144
1889	1, 691, 264	3, 346	1, 694, 610	10, 258	1, 704, 86

CONSUMPTION OF ALL KINDS OF RAILS IN THE UNITED STATES.

			Tons of 2,000 pounds.						
	Year.		Made in	Impo	rted.	Approximate			
-			United States.	Iron.	Steel.	consumption.			
			462, 108	a 163, 049		625, 157			
	************		506, 714	a 250, 081	************	10.04 100			
			593, 586	a 313, 163	************	906, 749			
		*************	620,000	a 399, 153	************	1, 019, 153			
	*************		775, 733	a 566, 202	**********	1, 341, 935			
	*************		1,000,000	381, 064	149, 786	1, 520, 850			
	**************		890, 077	99, 201	159, 571	1, 148, 849			
	***************	***************************************	729, 413	7, 796	100, 515	837, 724			
	*************	**************	792, 512	1, 174	18, 274	811, 960			
	****************		879, 629	287	None.	879, 916			
			764, 709	None.	35	764, 744			
	***************	**********	822, 685	None.	10	882, 693			
879	*****************		1, 113, 273	19,090	25, 057	1, 157, 420			
880			1,461,837	132, 459	158, 230	1, 752, 526			
881			1,844, 100	137, 013	249, 308	2, 230, 421			
882			1,688,794	41, 992	- 182, 135	1, 912, 921			
	***************		1, 360, 694	757	38, 220	1, 399, 673			
884			1, 144, 851	94	3, 074	1, 148, 011			
885	****************		1,094,215	57	2, 395	1, 096, 66			
886	******************		1,792,601	7	46, 571	1, 839, 179			
	***************************************		2, 396, 397	270	154, 099	2, 550, 760			
			1, 572, 144	24	70, 578	1, 642, 74			
			1, 704, 868	16	6,946	1, 711, 830			

s Including steel.

CONSUMPTION OF PIG IRON AND OF IRON AND STEEL BAILS.

[In the following table we give the approximate consumption in the United States of pig iron and of iron and steel rails in the last thirty-five years. The production in calendar years is added to the importations in facal years, the result being the yearly occamption in calendar years as nearly as can be assortained. The figures given have been compiled from the records of the American Iron and Steel Association and from the reports of the bureau of statistics of the treasury department.]

Calendar	Productio 2,240 p	n (tons of ounds).	Fiscal year	Importation 2,240 per	ons (tons of	Year.		on (tone of ounds).
Dec. 31.	Pig iron.	Iron and steel rails.	June 30.	Pig iron.	Iron and steel rails.	1,521.	Pig iron.	Iron and steel rails.
1856	700, 159	123, 816	1855	98, 925	127, 516	1855	799, 084	251, 332
1856	788, 515	160, 730	1856	59, 012	155, 495	1856	847, 527	316, 225
1857	712, 640	144, 570	1857	51, 794	179, 305	1857	764, 434	323, 875
1858	629, 548	146, 171	1858	41, 986	75, 745	1858	671, 534	221, 916
1859	750, 560	174, 513	1859	72, 517	69, 965	1859		244, 478
1860		183, 070	1860	71, 498	122, 175	1860	892, 721	305, 245
1861	653, 164	169, 480	1861	74, 026	74, 490	1861		243, 970
1862	703, 270	190, 993	1862	22, 247	8,611	1862	725, 517	199, 604
1863	846, 075	246, 221	1863	31,007	17, 088	1863	877, 082	263, 309
1864	1, 014, 282	299, 437	1864	102, 223	118,714	1864	1, 116, 505	418, 151
1865	831, 770	318, 118	1865	50, 652	77, 518	1865	882, 422	-395, 636
1866	1, 205, 663	384, 623	1866	102, 392	78, 007	1866	1, 308, 055	462, 630
1867	1, 305, 023	412,596	1867		96, 272	1867	1, 417, 065	508, 868
1868	1, 431, 250	452, 423	1868	112, 133	151, 097	1868	1, 543, 383	603, 520
1869	1, 711, 287	529, 988	1869	136, 975	237, 703	1869	1, 848, 262	767, 691
1870	1, 665, 179	553, 571	1870	153, 283	279, 765	1870	1, 818, 462	833, 336
1871	1, 706, 793	692, 619	1871		458, 055	1871		1, 150, 674
1872	2, 548, 713	892, 857	1872	247, 528	531, 536	1872		1, 424, 393
1878	2, 560, 963	794, 712	1873	215, 495	357, 629	1873		1, 152, 341
1874		651, 262	1874		148, 918	1874		800, 180
1875	2, 023, 733	707, 600	1875		42, 082	1875	2, 077, 481	749, 682
1876		785, 383	1876	79, 455	4,708	1876		790, 091
1877		682, 776	1877		30	1877		682, 806
1878	2, 301, 215	788, 112	1878	55, 000	11	1878	2, 356, 215	788, 123
1879	2, 741, 853	993, 993	1879	87, 576	2,611	1879	2, 829, 429	996, 604
1880	3, 835, 191	1, 305, 212	1880		152, 791	1880	4, 589, 848	1, 458, 003
1881	4, 144, 254	1, 646, 518	1881		302, 294	1881		1, 948, 812
1882	4, 625, 323	1, 507, 851	1882		295, 666	1882	5, 119, 368	1, 803, 517
1883	4, 595, 510	1, 214, 905	1883	433, 602	118, 062	1883	5, 029, 112	1, 332, 967
1884	4, 097, 868	1, 022, 188	1884		7, 971	1844	4, 381, 040	1, 030, 159
1885	4, 044, 526	976, 978	1885		4, 203	1885	4, 196, 485	981, 181
18F6	5, 683, 329	1, 600, 537	1886	261, 674	10, 507	1886	5, 945, 003	1, 611, 044
1887		2, 139, 640	1887		77, 043	1887		2, 216, 683
1888		1, 403, 700	1888	- 325, 517	137, 034	1888	6, 815, 255	1, 540, 724
1000	6, 489, 738	1, 522, 204	1889			1889	7, 780, 369	1, 546, 481
1889	7, 603, 642	1, 032, 204	1009	110, 121	24, 277	1004	1, 100, 000	4, 540, 401

Mr. H. V. Poor, in an argument presented to the ways and means committee of the house of representatives, at Washington, on February 3, 1880, gave the price of steel rails in British ports in 1863 as 369 shillings, or \$89.79.

IMPORTS OF IRON, STEEL, ETC., INTO THE UNITED STATES.

[Prepared from statistics furnished by the United States bureau of statistics.]

	18	386.	18	87.	1	888.	1	889.
Commodities.	Tons of 2,000 pounds.	Values.	Tons of 2,000 pounds.	Values.	Tons of 2,000 pounds.	Values.	Tons of 2,000 pounds.	Values.
Pig iron	405,180	\$5,454,784	523,625	\$7,281,824	220,905	\$3,007,327	159,298	\$2,863,137
Scrap iron	97,635	1,056,387	351,014	4,589,753	50,175	531,365	40,227	447,492
Scrap steel	11,353	145,649	29,716	341,073	10,280	113,168	2,510	33,964
Bar iron	32,647	1,250,456	40,565	1,400,015		1,119,107		1,097,132
Iron rails	7	168	270	5,701		496	16	229
Steel rails	46,571	887,267	154,099	2,982,830		1,524,662	6,946	163,110
Cotton ties	11,561	288,360	24,278	600,454		837,750	23,313	630,950
Hoop, band, and scroll	128	2,949		985		7,042	7	291
Steel hoops, sheets, and plates.	4,719	224,879	26,885	851,903	26,220	900,218	15,695	783,215
Steel ingots, bars,	167,257	3,298,707	347,818	6,543,935	116,006	2,822,870	81,545	1,989,837
Sheet, plate, and tag- gers' iron.	6,352	518,417	8,012	529,019	7,008	395, 140	7,876	441,456
Tin plates	288,761	17,504,976	317.896	18,699,145	334.026	19,762,961	371,068	21,726,707
Wire rods	153,401	3,940,849		4,326,617		3,127,876	82,608	2,409,259
Wire and wire rope		512,389	3,247	582,548	3,549	579,178	4,571	731,216
Anvils, axles, and forgings.	963	105,072	1,474	153,134	1,319	170,016	1,568	179,254
Chains	669	70,883	1,023	98,801	929	94,947	695	77,618
Cutlery		1,822,511		2,050,515		2,239,385		2,362,536
Files, file blanks, rasps, and floats.		57,478		74,190		62,864		69, 157
Firearms		936,554		1,053,573		1,055,071		1,233,242
Machinery		1,697,883		1.970,543		1,966,839		2,829,633
Needles		335,514		331,342				279,244
Other manufactures of iron and steel.		1,518,649		1,952,707		1,709,407		1,676,060
Total		41,630,779		56,420,607		42,311,689		42,027,742
Iron ore	1,164,165	1,912,437	1,337,617	2,206,958	657,966	1,313,589	956,002	1,852,392

In the production of coal, one of the raw materials in the manufacture of pig iron, the United States is only surpassed by Great Britain, while in the production of iron ore, another raw material, the United States is nearly abreast of its great rival.

The following table shows our production of these important products in 1839 in comparison with their production by other countries in that year or in the most recent years for which official statistics or data for a careful estimate are available. English tons of 2,240 pounds are used in giving the statistics of Great Britain and the United States, and metric tons of 2,204 pounds are used for all-the continental countries of Europe:

THE WORLD'S PRODUCTION OF IRON ORE AND COAL,

	Iron	ore.	Coal.		
Countries.	Year.	Tons.	Year.	Tons.	
Great Britain United States Germany and Luxemburg France Belgium Anstria and Hungary Russia Sweden Spain Italy Other countries.	1888	14, 590, 713 14, 096, 427 10, 664, 800 2, 500, 000 213, 000 2, 200, 000 1, 334, 699 959, 540 4, 500, 200, 575 2, 000, 000	1888 1888 1889 1889 1889 1887 1889 1887	169, 935, 219 123, 674, 771 81, 960, 900 24, 588, 888 19, 810, 900 24, 000, 000 4, 464, 174 300, 900 1, 900, 900 327, 665 12, 900, 900	
Total		53, 289, 754		462, 060, 709	
Percentage of the United States		26.4		26.7	

The following table gives the world's production of pig iron and steel in the most recent years for which statistics are available, but chiefly for 1889. English tons of 2,240 pounds are used in giving the statistics of Great Britain and the United States, and metric tons of 2,204 pounds for all the continental countries of Europe. As in the case of iron ore and coal, the United States is only surpassed by Great Britain in the production of pig iron and steel. (a)

THE WORLD'S PRODUCTION OF PIG IRON AND STEEL

. Countries.	Pi	g iron.	Steel.		
Consum.	Year.	Tone.	Year.	Tone.	
Oreat Britain United States Germany and Luxemburg Prance Belgium Austria and flungary Exectes Spain Italy Other countries	1889 1899 1849 1848 1888	8, 245, 236 7, 602, 842 4, 887, 504 1, 722, 440 847, 000 761, 606 532, 849 457, 062 200, 000	1800 1800 1606 1809 1807 1807 1807 1807	3, 600, R62 8, 395, 732 1, 692, 600 828, 621 248, 600 255, 628 222, 625 114, 537 24, 500 73, 262 36, 600	
Total		24, 893, 534		10, 513, 977	
Percentage of the United States		30		12	

It will be seen that in 1889 the United States produced 30 per cent. of the world's production of pig iron and 32 per cent. of its production of all kinds of steel.

The statistics of the production of pig iron and steel which have been given in the above table show that there are now three great iron and steel producing countries, namely Great Britain, the United States, and Germany, whereas only twenty-five years ago Great Britain was so far ahead of all other countries in the manufacture of these products that her manufacturers and statesmen did not dream that she would ever have serious competitors in the world's markets. The iron and steel consuming countries of the world were supposed to be dependent upon her for Welsh rails for their railroads, the finer qualities of Scotch pig iron for foundery purposes, Low Moor and other favorite brands of plate iron for boilers, Crown and other choice brands of bar iron from Staffordshire, English-drawn wire, English hoops and cotton ties, Sheffield cutlery and edge tools, and all kinds of iron and steel machinery in the manufacture of which great skill is required. At that time the Bessemer steel industry had not been established in the United States and its possibilities were not understood even in England where it originated, and we had but just commenced to develop our rich stores of Lake Superior iron ores and to apply our excellent Connellsville coke to their reduc-Germany lagged far behind as a producer of pig iron and steel tion. and all their products.

The basic process of manufacturing steel from highly phosphoriferous ores, with which Germany is abundantly supplied, had not then been invented. But Great Britain was busy making steel by various new and old processes; she had an abundant supply of cheap coal; she had

a Since the foregoing table was prepared the United States has taken the first place in the production of iron.

long known the virtues of Durham and other coke; and she had a

variety of iron ores in abundance everywhere.

Since those days the United States and Germany have rapidly and even phenomenally increased their production of pig iron and steel, and of all articles made from them. The whole world, indeed, has greatly increased its production of iron and steel in the last twenty five years, a result which is largely due to the extraordinary development in that period of railroad enterprises in all civilized countries, and to the invention of the Bessemer process which has made cheap steel rails and cheap transportation possible; but the United States and Germany have made more progress than any other countries, and very much more relatively than Great Britain.

The following table shows the world's production of pig iron and steel in 1878, twelve years ago, complete statistics for an earlier period being inaccessible. Gross tons [of 2,240 pounds] are used for Great Britain and the United States, and metric tons [of 2,204 pounds] for all

other countries:

THE WORLD'S PRODUCTION OF PIG IRON AND STEEL IN 1878.

_	Tons.		
Countries.	Pig iron.	Steel.	
Great Britain United States Germany and Luxemburg France Belgium Austria and Hungary Russia Sweden Spain Utaly Other countries	6, 381, 051 2, 201, 215 2, 147, 641 1, 417, 072 498, 544 434, 259 409, 623 323, 496 60, 609 20, 000 120, 600	1, 100, 000 731, 976 570, 321 281, 806 98, 696 126, 478 68, 508 25, 918 250 3, 006 16, 756	
Total	14, 117, 902	8, 921, 096	

By comparing this table with the preceding table for 1889 it will be seen that the world's production of pig iron increased from 14,117,902 tons in 1878 to 24,869,534 tons in 1889, or 76 per cent., while the world's production of steel increased in the same period from 3,021,093 tons to 10,513,977 tons, or 248 per cent. This is wonderful progress. The figures we give are most significant, however, in showing how rapidly the use of steel has grown in favor, notwithstanding the increased use of manufactured iron. The cheapness with which steel can now be produced has greatly stimulated the production of pig iron suitable for its manufacture.

The following tables exhibit in percentages the relative position of Great Britain, the United States, Germany, and all other iron and steel producing countries in 1878 and 1889. Gross and metric tons are used as heretofore explained. The small pig iron production of Luxemburg is necessarily included with that of Germany.

is necessarily included with that of Germany.

THE WORLD'S PRODUCTION OF PIG IRON IN 1878 AND 1888.

	Ton	Per cent.		
Countries.	1878.	1889.	1878.	1889.
Great Britain United States Germany and Luxemburg France Belgium Austria and Hungary Russia Sweden Spain Italy Other countries	6, 381, 051 2, 301, 215 2, 147, 641 1, 417, 072 493, 544 434, 250 409, 633 333, 496 60, 000 20, 000 120, 000	8, 245, 336 7, 603, 642 4, 387, 504 1, 722, 480 847, 000 761, 606 632, 649 457, 052 200, 000 12, 265 100, 000	45. 20 16. 30 15. 21 10. 04 3. 50 3. 08 2. 90 2. 36 . 42 . 14	33, 16 30, 57 17, 64 6, 93 3, 41 3, 06 2, 14 1, 84 80 .05
Total	14, 117, 902	24, 869, 534	100,00	100, 00

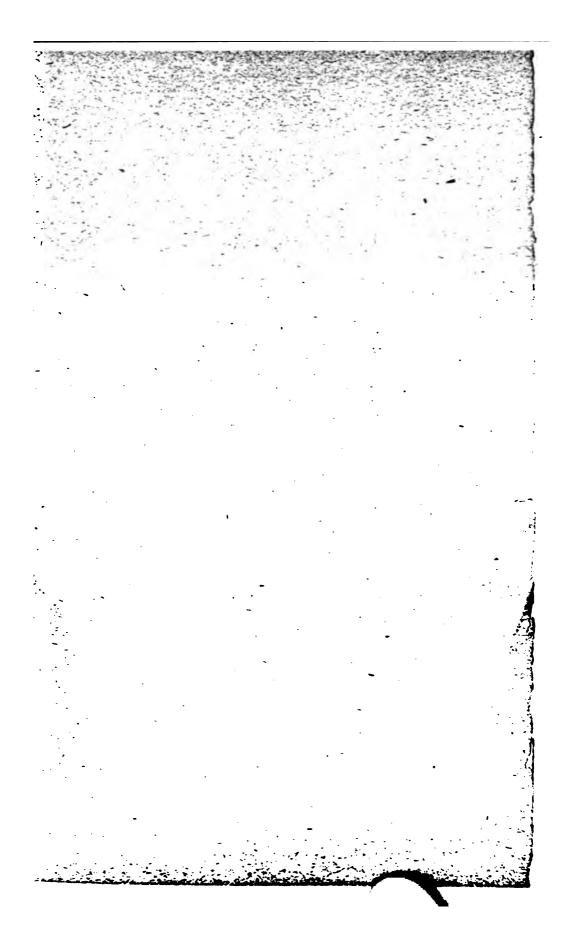
This table shows that Great Britain's production of pig iron has decreased in the last eleven years from 45.20 to 33.16 per cent. of the total product, while that of the United States has increased from 16.30 to 30.57 per cent., and that of Germany from 15.21 to 17.64 per cent.

THE WORLD'S PRODUCTION OF STEEL IN 1878 AND 1888.

_ :	Ton	ıa.	Per cent.		
Countries.	1878.	1880.	1978.	1880.	
Great Britain United States Germany France Belgium Austria and Hungary Ressia. Spain. Liniy Other countries.	1, 100, 000 781, 976 870, 328 281, 800 95, 000 128, 478 68, 583 25, 918 259 8, 669 18, 750	2, 909, 862 2, 325, 732 1, 962, 606 839, 621 244, 609 254, 008 221, 625 114, 537 24, 809 73, 262 28, 609	26. 41 34. 23 14. 68 8. 13 8. 14 4. 29 2. 29 . 66 . 61	34. 90 32. 30 17. 71 5. 63 2. 30 2. 11 1. 60 . 27 . 31	
Tetal	3, 021, 600	10, 512, 977	100.00	100.00	

This table shows that Great Britain has not quite maintained her relative position as a steel producer during the past eleven years; that Germany has maintained her position a little better than Great Britain, and that the United States has made a decided gain in the percentage of her production.

But Great Britain, while fast losing her leadership in the manufacture of iron and steel and sharing it with the United States and Germany, is destined to remain a powerful competitor with all iron and steel producing countries, both in their own and in neutral markets. Although a large importer in late years of iron ores of special qualities, she still mines large quantities of native ores, while the exhaustion of her vast supplies of coal is only a remote possibility. The foreign ores which she imports, chiefly from Spanish mines, are easily obtained.



PART I.

COST OF PRODUCTION:

PIG IRON.
MUCK BAR IRON.
FINISHED BAR IRON.
MISCELLANEOUS IRON.

STEEL INGOTS.

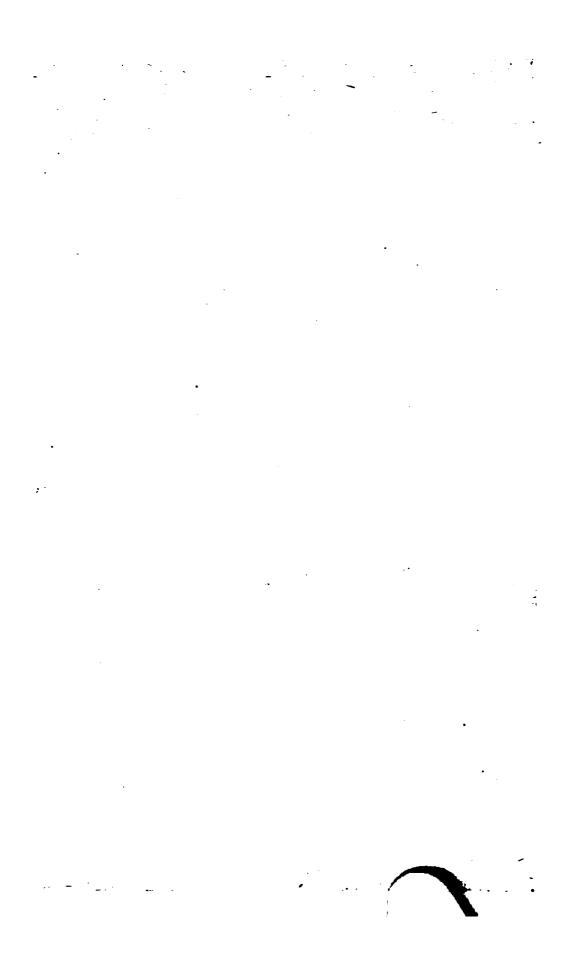
STERL RAILS.

MISCELLANEOUS STEEL.

BITUMINOU COKE.

IRON ORE.

BITUMINOUS COAL. COKE. IRON ORE. LIMESTONE.



COST OF PRODUCTION.

GENERAL TABLES.

The general tables relating to the cost of production, which constitute the bases of the analyses contained in Part I, are numbered from I to XI, inclusive. They cover 618 establishments, and are, respectively, for the cost of production of pig iron, of muck bar iron, of finished bar iron, of miscellaneous iron products, of steel ingots, of steel rails, of miscellaneous steel products, of bituminous coal, of coke, of iron ore, and of limestone, at various establishments, mines, ovens, and quarries in various states. For each general table there are numerous sub-tables, designated by capital letters. The establishments comprehended by each table are numbered separately; that is to say, the pig iron tables have their own series of numbers, ranging from 1 to 118, inclusive; the muck bar iron establishments have a separate series, running from 1 to 38, inclusive; the finished bar establishments from 1 to 29, inclusive, etc. An establishment number under one industry has no relation to the same number under another industry. It has been difficult, from a statistical point of view, to present the pig iron tables in such a way that all of their features might be easily used. The basis of presentation finally adopted is that of kind of product, all the establishments for one kind of product being presented seriatim for the different industries or countries; for instance all the establishments producing gray forge iron are brought together, with all the establishments in one district following each other. Other methods of presentation were carefully considered, but this on the whole seemed to have less objections than any other form. In some respects it might have been more convenient to have brought all the establishments for a specified district together, without regard to the kind of product, but it is evident that this method, while having some advantages, would have created much more confusion than that adopted. By notes accompanying each presentation or table, and through the analysis given following each table, it is felt that their various elements. complicated and analytical in themselves as they are, have been presented in the clearest manner possible under the circumstances. The industries are taken up one at a time, and in the order named, and all the appropriate analytical tables and text discussion belonging to each immediately follow it. Thus, under the first title, Cost of production of pig iron, etc., everything relating to pig iron is taken up. This method is somewhat different from that generally adopted, where great tables are the result of an investigation, in which case they are usually given collectively at the close of the report, the analyses preceding them.



PIG IRON.

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PIG IRON.

The first industry taken up in accordance with the plan which has been described in the introduction is pig iron. The tabulations present not only the cost of producing pig iron, but, so far as possible, the circumstances surrounding its production. As has been mentioned, the United States has been divided into two districts, the northern and the southern, and Europe into two, Great Britain and the continent of Europe. Whatever has been found that moderates or heightens, or in any manner changes the full force of the figures given, or whatever in any respect needs explanation, has been stated in the various accompanying notes. The titles of the table and sub-tables are here shown:

TABLE I .- Cost of Production of Pig Iron at Various Establishments in Various States.

- A .- Period covered and quantity of product.
- B.—The appliances of production.
- C.—The assemblage of the materials.
- D.—Chemical analysis of ore.
- E.—Quantity and cost of materials charged into the furnace.
- F.-Proportions of materials charged into the furnace.
- G.—General statement of cost for the period.
- H.—Elements of cost in one ton of 2,240 pounds.
- J.—Per cent. of each element of cost in one ton of 2,240 pounds.
- K.-Additional cost of certain theoretical elements.
- L.—Additional cost of certain theoretical elements in one ton of 2,240 pounds.

The days of running time, reported in Table I.—A, are days of two turns (or in a very few cases of three turns) each, or practically days of 24 hours, as the operations of a blast furnace except in accidental cases of stoppage are practically continuous.

In the column of description is shown the kind or grade of pig iron produced. The grading has been done as fully as it was possible to do in a tabular statement. The term run of furnace is used to designate the product of a furnace which produced several grades of pig iron in considerable quantities, and for which no means of separately determining the cost of each grade existed. This division into grades is important, as it furnishes a reason for the differences in the cost of materials in different establishments; for the materials necessary to make Bessemer iron, for example, are of a better grade, and usually cost more than those for forge iron.

H. Ex. 265-3

= : griduction, has an in muson for the differentially in meeding table.

seconted in Table I.—D, while second of the ores, and become secting quantities of ore used.

The second proportions of materials second with Table I.—D and the second (Table I.—H). It will be seen the ore shows a high permarged into the furnace per ton

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I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES.

[The names of the states are omitted to prevent the identification of individual establishments, but the states covered and number of establishments for each are as follows: In the northern district of the United States—Illinois, 3; Indiana, 1; Maryland, 1; Michigan, 2; Missouri, 1; New York, 5; Ohio, 21; Pennsylvania, 34; West Virginia, 4; Wisconsin, 1. In the southern district of the United States—Alabama, 12; Georgia, 1; Tennessee, 6; Virginia, 6. In continental Europe—Belgium, 6; France, 1; Gernroy, 5. In Great Britain, 8.]

TRIOD COVERED AND QUANTITY OF PRODUCT.

		Period covered.	Pig iron produced.				
Es-			Days		Ton: 2,240 pc		Num- ber
ment num- ber.	Locality.	Terminal dates.	of run- ning time.	Description.	Total.	Per day per fur- nace.	of fur- naces
1	Northern dis- trict, United States.	July 1, 1889, to Dec. 31, 1889	150	Hot blast charcoal	2, 890	19	1
2	do	Dec. 1, 1888, to Nov. 30, 1889	344	Hot blast charcoal	24, 915	73	1
3	do	Apr. 15, 1889, to Nov. 15, 1889	196	Hot blast charcoal	11,779	60	i
4	do	Jan. 1, 1889, to Dec. 31, 1889	305	Hot blast charcoal		44	1 1
5	do	Apr. 1, 1889, to Mar. 31, 1890	241	Hot blast charcoal	3,000	12	1 1
6	do	Jan. 1, 1889, to Dec. 31, 1889	248	Cold blast charcoal	2, 500	10	l i
7	do	Jan. 1, 1889, to Dec. 31, 1889	317	Cold blast charcoal	1, 582	5	1 1
8	Southern dis- trict, U. S.	Jan. 1, 1889, to Dec. 31, 1889	353	Hot blast charcoal	14, 398	41	1
9	Northern dia- trict, U. S.	Jan. 1, 1889, to Dec. 31, 1889	365	Beasemer	a18,614	b140	1
10	do	Jan. 1, 1889, to Dec. 31, 1889	336	Bessemer	51, 506	153	1 1
11	do	Nov. 1, 1888, to Oct. 31, 1889	297	Bessemer	21, 074	71	1 1
12	do	Jan. 7, 1889, to July 1, 1889	171	Bessemer	25, 393	148	1 1
13	do	Jan. 1, 1889, to Dec. 31, 1889	338	Bessemer	24, 741	73	1 1
14	do	Jan. 1, 1889, to Dec. 31, 1889	344	Bessemer	84, 620	123	2
15	do	Jan. 1, 1889, to Dec. 31, 1889	288	Bessemer	32, 879	114	1 1
16	0	Jan. 1, 1889, to Dec. 31, 1889	205	Bessemer	72,884	178	2 1
17	do	Jan. 1, 1889, to Dec. 31, 1889	310	Bessemer (c)	30,000	97	1
18	do	Jan. 1, 1888, to Dec. 31, 1888	216	Bessemer	25, 715	119	1
19	do	Aug. 3, 1889, to Feb. 1, 1890	182	Bessemer	25, 450	140	1
20	do	Jan. 1, 1888, to Dec. 31, 1888	365	Beasemer	43, 800	120	1
21	do	Apr. 1, 18a9, to July 1, 1889	91	Bessemer	21, 450	236	1
22	do	July 1, 1889, to Dec. 31, 1889	184	Bessemer	22, 080	120	1
23	do	Jan. 1, 1889, to Dec. 31, 1889	365	Bessemer	30, 392	83	1
24	da	June 1, 1889, to Dec. 31, 1889	214	Bessemer	24, 189	113	1
25	do	Jan. 1, 1889, to Dec. 31, 1889	348	Bessemer	27, 132	78	1
26	do	Jan. 1, 1889, to Dec. 31, 1889	309	Bessemer	31, 474	102	1
27	do	Jan. 1, 1889, to Dec. 31, 1889	333	Bessemer	41, 634	63	2
28	do	Jan. 1, 1889, to Dec. 31, 1889	365	Bessemer	43, 800	120	1
29	do	Jan. 1, 1888, to Dec. 31, 1888	226	Bessemer	32, 845	145	1
30	do	Jan. 1, 1889, to June 30, 1889	180	Bessemer		118	1
31	do	July 1, 1889, to Dec. 31, 1889	173	Bessemer		117	1
32	Continent of Europe.	Jan. 1, 1889, to Dec. 31, 1889 July 1, 1887, to June 30, 1888	191 366	Bessemer	24, 647 107, 278	129 73	1
34	do	Apr. 7, 1889, to May 4, 1889	28	Bessemer	d 1, 508	€35	3
35	do	Jan. 1, 1889, to Dec. 31, 1889	365	Bessemer	85, 626	117	
36	Great Britain.	Apr. 1, 1888, to Sept. 29, 1888	182	Bessemer	31, 714	87	2 2
37	do	Apr. 1, 1888, to Sept. 29, 1888	182		f45, 408	9 69	4
38	do	Dec.30, 1888, to June 29, 1889	182	Bessemer		62	3
39	do	Nov. 1, 1888, to Oct. 31, 1889	363	Bessemer		87	2
40	Continent of Europe.	Mar. 1, 1890, to Mar. 31, 1890	31	Spiegeleisen		34	i
41	Northern dis- trict, U. S.	July 17, 1888, to Dec. 31, 1888	167	Foundery No. 1	8, 296	50	1
42		June 1, 1888, to May 31, 1889	365	Foundery No. 1	29, 390	81	1

a Establishment also produced during the period 32,417 tons of foundary pig iron.
b Including production of foundary pig iron.
c Guaranteed as having under one-tentic of 1 per cent. of phosphorus.
d Establishment also produced during the period 1,392 tons of foundary pig iron No. 2.
e Including production of foundary pig iron No. 2.
f Establishment also produced during the period 4,843 tons of gray forge pig iron.
g Including production of gray forge pig iron.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS . LISHMENTS IN VARIOUS STATES—Continued.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT-Continued.

-		Period covered.		Pig iron pred	uced.		1
Es- tab- lish-	27		Days		Ton: 2,240 pc		Number
ment num- ber.	Locality.	Terminal dates.	of run- ning time.	Description.	Total.	Per day per fur- nace.	of fur- naces
43	Continent of Europe.	(a)		Foundery No. 1	(a)	(a)	(a)
44	do	'Apr. 7, 1889, to May 4, 1889	28	Foundery No. 2	61, 392	e 35	1 0
45	do	(a)	(a)	Foundery No. 3	(a)	(a)	(a)
46	Northern dis- trict, U. S.	Jan. 1, 1889, to Dec. 31, 1889	365	Foundery		44	
47	do	Nov. 1, 1888, to June 30, 1889	234	Foundery	11,467	40	
48	do	Nov. 1, 1888, to Oct. 31, 1889	313	Foundery	23,720 17,757	76	1 2
49	do	Apr. 1, 1889, to Dec. 28, 1889	271	Foundery	17,757	66	1
50	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1888, to Dec. 31, 1888	365	Foundery	d32,417	c140	
51	do	Jan. 1, 1888, to Dec. 31, 1888	233	Foundery		107	
52	do	July 1, 1888, to May 4, 1889	230	Gray forge		114	
53	do	Jan. 1, 1889, to Dec. 31, 1889	365	Gray forge	57, 100	156	
54	do	Jan. 1, 1889, to June 30, 1889	181	Gray forge	22,931	63	
55	do	Oct. 21, 1888, to Apr. 21, 1889	180	Gray forge	22,060	123	
56	do	Jan. 1, 1888, to Dec. 31, 1888 July 25, 1889	182	Gray forge	14,214	78	
57	do	July 25, 1889	1	Gray forge	195	195	
58	do	July 1, 1889, to Sept. 1, 1880	62	Gray forge	11,222	181	
59	do	Jan. 1, 1889, to Dec. 31, 1889	365	Gray forge		42	
60	Continent of Europe.	Jan. 1, 1889, to Dec. 31, 1889	365	Gray forge	67,839	93	
61	Great Britain.	Apr. 1, 1888, to Sept. 29, 1888	182	Gray forge	e 4, 843	0 09	
62	do	Nov. 1, 1888, to Oct. 31, 1889	365	Gray forge (f)	921, 873	A82	
63	do	Nov. 1, 1888, to Oct. 31, 1889 Nov. 1, 1888, to Oct. 31, 1889	365	Gray forge (i)	j 7, 980	k 82	
64	Continent of Europe.	Oct. 1, 1859, to Oct. 31, 1889	22	Gray forge	1, 258	57	113
65	Northern dis- trict, U. S.	Sept. 10, 1888, to May 21, 1889	252	Run of furnace	100	34	1
66	do	July 1, 1888, to June 30, 1869	340	Run of furnace		118	
67	do	July 1, 1888, to June 30, 1889	304	Run of furnace	32,633	107	
68	do	Oct. 1, 1889, to Dec. 31, 1889	92	Run of furnace		122	
69	do	July 1, 1883, to Dec. 31, 1889	182	Run of furnace	88,415	106	10
70	do	Jan. 1, 1889, to Dec. 31, 1859	305	Run of furnace		44	
71	do	Jan. 1, 1889, to Dec. 31, 1889	361	Run of furnace		156	
72	do	Jan. 1, 1888, to Dec. 31, 1888	366	Run of turnace	36,470	100	
73	do	Jan. 1, 1889, to Dec. 31, 1889	350	Run of furnace	14, 724 32, 739 34, 543	42	
74	do	Jan. 1, 1888, to Dec. 31, 1888	366	Run of furnace	32, 739	89	
75	do	Jan. 1, 1888, to Dec. 31, 1888	366	Ran of furnace	34, 343	94	1 3
76	do	June 1, 1888, to May 31, 1889	357	Run of furnace		91	1 3
77	do	July 1, 1888, to June 30, 1889	309	Run of furnace	26,016	84	
78	do	July 1, 1889, to July 31, 1889 Oct. 1, 1889, to Oct. 31, 1889 Dec. 1, 1889, to Dec. 31, 1889	31 30	Run of furnace	1,051	34	1. 15
79	do	Dec 1, 1000, to Oct. 01, 1000	31	Run of furnace		54	
80	do	Tule 1 1948 to Tune 00 1000	296	Run of furnace		45	
81 82	do	July 1, 1888, to June 29, 1889 May 1, 1889, to July 31, 1889	92	Run of furnace		62	1 3
	do	May 1, 1889, to July 31, 1889	92	Run of furnace		27	1.5
83 84	do	Feb. 1, 1889, to May 31, 1889	120	Run of furnace		49	
85	do	Oct. 1, 1889, to Dec. 31, 1889	92	Run of furbace	1, 385	15	1
86	do	July 1, 1889, to Dec. 31, 1889	184	Run of furnace		96	
87	do	Aug. 29, 1880, to Jan. 1, 1890	124	Run of furnace	9, 182	74	
88	do	Jan. 1, 1889, to Dec. 31, 1889	306	Run of furnace	24, 401	80	1 6
89	do	Jan. 1, 1889, to Dec. 31, 1889		Run of furnace		111	1
90	do	Sept, 1, 1889, to Mar 31, 1890	167	Ran of furnace		119	
91	Southern dis-	Sept. 1, 1888, to Aug. 31, 1889	283	Run of furnace	39,028	69	
92	trict, U. S.	Jan. 1 1889 to Oct. 13 1889	286	Run of furnace	35, 036	61	
93	do	Jan. 1, 1889, to Oct. 13, 1889 Oct. 7, 1889, to Dec. 31, 1889	78	Run of furnace		85	
-		Jan. 1, 1889, to Dec. 31, 1880		Run of furnace		102	1

a Not reported.

b Establishment also produced during the period 1,508 tons of Bessemer pig iron.

s Including production of Bessemer pig iron.

d Establishment also produced during the period 18,614 tons of Bessemer pig iron.

e Establishment also produced during the period 45,406 tons of Bessemer pig iron.

s Establishment also produced during the period 5, see tons of Desermer pig from f Special grade.

g Establishment also produced during the period 7,980 tons of ordinary grade gray forge pig from Alneluding production of ordinary grade gray forge pig iron.

i Ordinary grade.

j Establishment also produced during the period 21,873 tons of special grade gray forge pig iron.

k Including production of special grade gray forge pig iron.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT-Concluded.

		Period covered.		Pig iron prod	uced.		
Ea- tab-	1-01	Terminal dates. run			Tons of 2,240 pounds.		Nam-
ment nam- ber.	Locality. of			Description.	Total.	Per day per fur- nace.	of fur- naces.
95	Southern dis- trict, U. S.	July 1, 1888, to Dec. 31, 1889	371	Run of furnace	19, 323	52	1
96	do	Apr. 16, 1889, to Feb. 1, 1890	290	Run of furnace	23, 486	81	1
97	do	Oct. 1, 1889, to Jan. 31, 1890	106	Run of furnace	10, 353	98	1
98	do	Oct. 9, 1889, to Jan. 9, 1890		Run of furnace	7, 200	87	1
99	do	Jan. 1, 1800, to Jan. 31, 1890	31	Run of furnace	12, 595	102	4
100	do	Feb. 1, 1r89, to Jan. 31, 1890	365	Run of furnace	62, 561	86	2
101	do	Feb. 1, 1889, to Jan. 31, 1890	323	Run of furnace	46,770	72	2
102	do	May 1, 1889, to May 31, 1889	31	Run of furnace	2,774	89	1
103	do	May 1, 1888, to Apr. 30, 1889	365	Run of furnace	34, 506	95	1
104	do	Nov. 1, 1889, to Nov. 30, 1889	30	Run of furnace	1,921	64	1
105	do	Nov. 1, 1889, to Nov. 30, 1889	30	Run of furnace	2,792	47	2
106	do	Nov. 1, 1889, to Nov. 30, 1889	30	Run of furnace	3,400	113	1 2 2 1 1
107	do	Jan. 1, 1889, to Dec. 31, 1889	365	Run of furnace	73,000	100	2
108	do	Feb. 1, 1889, to Jan. 31, 1890	365	Run of furnace	61, 133	84	2
109	do	Jan. 1, 1888, to Dec. 31, 1888	315	Run of furnace	32, 921	105	1
110	do	Jan. 1, 1888, to Dec. 31,1888	364	Run of furnace	30, 338	42	
111	do	Jan. 1, 1888, to Dec. 31, 1888	328	Run of furnace	12,092	37	1
112	do	Apr. 1, 18:8, to Mar. 31, 1889	365	Run of furnace	39, 947	109	1
113	do	July 1, 1888, to June 30, 1889	361	Run of farnace	42, 948	119	1
114	do	Dec. 1, 1888, to Nov. 30, 1889	338	Run of furnace	11,855	35	1
115	Continent of Europe.	Jan. 1, 1889, to Dec. 31, 1889	365	Run of furnace	33, 685	46	2
116	Great Britain.	Jan. 1, 1889, to Apr. 2, 1889	91	Basic	13, 200	(a)	(a)
117	Continent of Europe.	Jan. 1, 1888, to Dec. 31, 1888	(a)	Thomas	(a)	(a)	(a)
118	do	Oct. 1, 1889, to Oct. 31, 1889	31	Thomas	1,690	55	1

a Not reported.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

B .- THE APPLIANCES OF PRODUCTION.

(Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States: numbers 8, and 91 to 114 are in the southern district of the United States: numbers 33 to 85, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.)

	Furnaces.					Blowing engines.		
2	Num- ber,	Diameter of bosh (inches).	Height of stack (feet).	Heating stoves for each.	Years without relining.	Num- ber.	Kind of fael used.	
I	1	132	48	1	3	1	Furnace gas.	
ш	1	120	36	1	2	1	Furnace gas.	
1	1	132	50	1	(a)	1	Furnace gas.	
П	1	132 120	55 32	. 1	211	1	Furnace gas and wood.	
1	1	123	36	i	11	1 1	Furnace gas. Furnace gas.	
	î	96	30		1	î	Furnace gas.	
Ш	î	138	55	2	12	2	Furnace gas.	
п	1	212	80	2	3	2	Furnace gas.	
	1	216	80	4	(b)	2	Furnace gas and oil.	
	1	204	65	3	11	2	Furnace gas.	
П	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	192	75 65		2	2 2 2 2 2 1	Furnace gas and coal.	
	2	(c) 162	(4)	4 3 4 3	1	4	Furnace gas and coal. Furnace gas.	
	2	180	75	3	2	2	Furnace gas and coal.	
н	1	240	(e)	3	2½ 3	4	Furnace gas.	
	1	189	70	3 3	3	3	Furnace gas.	
	1	180	75	3	2 2	2	Furnace gas.	
	1	204	80 70	3 3	2	3	Furnace gas.	
	1 1 1	204	75		2 2 3 2 2 2	3	Furnace gas.	
	î	204	70	3	2	4	Furnace gas.	
	î	168	65	3	3	2	Coal.	
	1	180	75	3 4	2	3	Furnace gas.	
	1	144	65	2 3	2	2	Furnace gas.	
	1	180	70	3	2	2	Furnace gas.	
	- 2	192	(9) 75	2 3	11	3	Furnace gas.	
	1	192	75	3	2	2 2	Furnace gas. Furnace gas.	
	1 1 1 1 1	216	65	3	21	2	Furnace gas.	
	1	216	65	3 3 3	24	2 2	Furnace gas and coal	
	1	192	75	3	24 24 2	2	Furnace gas.	
	4	220	60	4		3	Furnace gas.	
	3	220 236	66	4 6	8	3 2	Coal.	
	2 4	240	60	3	(h) 7	2	Furnace gas and coal. Furnace gas and coal.	
	4	(6)	60	(J)	8	2	Furnace gas and coal.	
	3	210	(k)	4	3	2	Coal.	
	2	228	75	3	12	2	Furnace gas.	
	1	157	56	2	6	1	Furnace gas.	
	1	168	65	3	11	1 2	Furnace gas.	
	(1)	(1)	(1) 70	(1) 3	(1)	(1)	Furnace gas.	
	3	220	60	4	8	3	Coal.	
	(1)	(1)	(1)	(1)	(t)	(1)	(l)	
	1	192	60	2	3	1	Furnace gas.	
	1	180	65	3	3	1	Furnace gas.	
	1	204	63	3	19	2	Furnace gas.	
	1	192	65 80		11	1 2	Furnace gas and coal.	
	1	204	80	3	3	2	Furnace gas.	
	2	192	70	3 2 3	24	3	Furnace gas and coal.	
	1	192	75	3	21	2	Furnace gas.	
	2	186	55	2	. 5	2	Furnace gas.	
	1	186	70	3	(I)	3	Furnace gas.	
	1	174	65	3	2	2	Furnace gas.	
	1	228 240	80 75	3.	(1)	3	Furnace gas.	
	1 1 2 1 1 1 1 1 1 1 1 1	156	54	3	2 2	1	Furnace gas and coal.	
	2	(1)	(1)	(m)	(n)	3	Furnace gas.	
	4	(6)	60					

- a Furnace built 9 years; never yet relined.
 b Furnace new; never yet relined.
 c One 204 inches and one 186 inches.
 d One 30 feet and one 70 feet.
 c One 152 inches and one 164 inches.
 f One 152 inches and one 164 inches.
 Gone 35 feet and one 70 feet.
 b Furnace built 6 years; never yet relined.

- i One 210 inches and three 192 inches.
 j One with 6 and three with 5 heating stores
 each.
 l One 66 feet and two 60 feet.
 l Not reported.
 m One with 3 and one with 4 heating stores.
 n One 16 and one 17 years.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

B .- THE APPLIANCES OF PRODUCTION-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 32 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

Es-			Furnace	9.		Blowing engines.	
ish- nent num- ber.	Num- ber.	Diameter of bosh (inches).	Height of stack (feet).	Heating stoves for each.	Years without relining.	Num- ber.	Kind of fuel used.
62	1	240	75	4	12	2	Furnace gas.
63	1	240	75	4 4 2 3 3 3 3 3	12	2	Furnace gas.
65	1	(a)	(a) 52	4	8 3	1	Furnace gas and coal. Furnace gas.
66	i	192	75	3		2	Furnace gas.
67	î	192	75	3	13	2	Furnace gas.
68	1	186	75 72	3	14	3	Furnace gas and coal
69	2	192	75 57	3	(6)	4	Furnace gas.
70	1	174	75	3	5	2	Furnace gas.
71 72	1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	192	77	3 2 3 2 5	25	2 3	Furnace gas. Furnace gas.
73	î	186	59	2	2	1	Furnace gas.
74	1	186	50		21 2 2 2 2 2	1	Furnace gas.
75	1 1 1 1 1	192	60	3	14	2 2	Furnace gas and coal,
76	1	168 186	63 72		2	1	Furnace gas and coal. Furnace gas and coal.
78	i	156	50	3	24	î	Furnace gas.
79	1	162	60	2	2h	1	Furnace gas.
80	2	204	65	2	31 24 2 3 3 5	2	Furnace gas and coal.
81 82	1	198 150	65 61	3	24	3	Furnace gas. Coal.
83	î	144	60	2	3 1	i	Furnace gas and coal.
84	î	162	60	2	3	1	Furnace gas.
85	1	138	43	1	5	1	Furnace gas.
86 87	1	168	60	4 77 77 51 51 77 77 77 77 77 77 77 77 77 77 77 77 77	3	1	Furnace gas and coal.
88	1	148	70	3	11	2	Furnace gas and coal. Furnace gas.
89	î	180	65	4	1.	2	Furnace gas and coal.
90	211111111111111111111111111111111111111	204	66	3	11 11 11 21 2	4	Furnace gas and coal.
91	2	204	75	(0)	2	6	Furnace gas and coal.
92	1	(d) 192	(e) 75	2 9	(a) 2½	5 2 2 2	Furnace gas and coal. Furnace gas and coal.
94	î	216	75	2 3	2	2	Furnace gas and coal.
95	1	164	65	3	3	2	Furnace gas and coal.
96	1	210	65	3	(a)	3 2	Furnace gas and coal.
97	1	192	75 75	3 4 3	(a) (a)	3	Furnace gas and coal. Furnace gas.
99	4	240	80	1 4	(4)	12	Furnace gas and coal.
100	2	(n)	(q)	3	24	5	Furnace gas and coal.
101	2	204	75	4	(a)	4	Furnace gas and coal.
103	1	204 192	63 69		2 3	3 2	Furnace gas. Furnace gas and coal.
104	î	156	60	2	9	2	Furnace gas.
105	2	(h)	65	2	21 21 31	4	Furnace gas.
106	1	192	69	3	25	2	Furnace gas.
107	2	216	75	3	31	5	Furna e gas.
108	1	240 192	70 70	3	14		Furnace gas. Furnace gas.
110	111111111111111111111111111111111111111	(0)	60	4 4 53 51 51 53 53 53 53 51 4 53	12	2	Furnace gas and coal.
111	1	150	61	4	(a)	2	Furnace gas.
112	1	204	75		(a)	2	Furnace gas and coke.
113	1	222	80 60	4 2	2	3	Furnace gas.
114	1 2	(j)	(k)	(1)	819	2	Furnace gas and coal. Furnace gas and coal.
116	(a)	(4)	(a)	(a)	(a)	(a)	Furnace gas.
117	(a)	(a)	(a)	(a)	(a)	(a)	(a)
118	1	(a)	(a)	3	7	1	Furnace gas and coal.

<sup>Not reported.
One furnace in use 2 years; one in use 3 years; neither ever relined.
One with 3 and one with 4 heating stoves.
One 198 inches and one 213 inches.
One 63 feet and one 75 feet.
One 192 inches and one 204 inches.</sup>

g One 65 feet and one 70 feet.
A One 163 inches and one 180 inches.
4 One 132 inches and one 168 inches.
5 One 222 inches and one 236 inches.
6 One 50 feet and one 62 feet.
C One with 6 and one with 2 heating stoves.

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PIG IRON.

31

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

C .- THE ASSEMBLAGE OF THE MATERIALS-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 23 to 35, 46, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 26 to 39, 61 to 63, and 116 are in Great Britain.]

		Coal mines	L	1	Ore mines		Lime	estone qua	rries.	C	oke ovens	
Es-		Transpor	tation.		Transpor	tation.		Transpor	tation.		Transpor	tation
ment num- ber.	Miles dis- tant	Means.	Cost per nomi- nal ton.	Miles dis- tant.	Means.	Cost per nomi- nal ton.	Miles dis- tank	Means.	Cost per nomi- nal ton.	Miles dis- tant.	Means.	Cost per nomi nal ton
75	(a)	Rail	(a)	830	Rail and	\$1.98	(a)	(a)	(a)	100	Rail	\$1.2
76	58	Rail	\$0.70	1,000	Rail and	3.00	20	Rail	\$0.40	125	Rail	1.3
77	2	Rail	.08	820	Rail and	1.98	30	Rail	. 40	140	Rail	1.2
78	40	Rail	1.00	200	Rail	2,00	1	Rail	.10	310	Rail	2.
79	145	Rail	(4)	76	Rail	.75	32	Boat	. 35	215	Rail	
80	20	Rail	. 20	20	Rail	. 35	2	Rail	. 02	(6)	(6)	(6)
81				7	Rail	. 50	148	Rail	. 85	(b)	(b)	(6)
82	1	Tram	. 10	1	Tram	.15	1	Tram	. 10	70	Tram	1
83	1 5	Team	(a)	200	Rail		1	Team	. 20	1 1	Team	11.0
84	145		(a)	76	Rail	(a)	32	Boat	. 35	215	Rail	1.
85	100	Rail	(a)	15	Rail	.03	10	(a)	(a)	280	(a)	(a)
86	56	Rail	.70	1,000	Rail and	2. 50	25	Rail	. 50	150	Rail	1.
87	50	Rail	. 70	900	Rail and	2. 60	25	Rail	.40	125	Rail	L
88				14	Rail	.45	1	Rail	. 05	115	Rail	1.
89	58	Rail	.70	1,000	Rail and	2. 50	25	Rail	. 50	140	Rail	L
90	600	Rail and	1.05	295	Rail and	1.45	20	Rail	. 04	630	Rail	2.
91	8.	Rail	. 04	1 2	Rail	. 04	25	Rail	. 28	3	Rail	1
92	6	Rail	(a)	8	Rail	. 25	4	Rail	(a)	(b)	(6)	(6)
93	80	Rail	1.00	35	Rail	. 35	10	Rail	. 25	1, 200	Rail	2.
94	83	Bail	. 75	25	Rail	. 33	24	Rail	. 25	87	Rail	1.2
95		Rail	(a)	1 10	Rail	(4)	33	Rail	(a)	8	Rail	(a)
96	25	Eatl	. 35	15	Rail	. 25	2	Rail	. 10	35	Rail	100
97	62	East	. 55	(c)	Rail	(c)	7	Rail	. 40	(d)	Rail	(d)
96				59	Rail	. 65	21	Rail	25	128	Ratl	
99	60,	Ball	(e)	12	Rail	.18	8	Rail	. 25	1	Rail	(a)
100	12	Kati	.20	10	Rail	. 25	6	Rail	. 25	(6)	(6)	(0)
191	12	Bail	. 20	10	Rail	. 25	6	Rail	.25	12	Rail	
1/2				(1)	Rail and	(1)	1	Rail	.04	50	Rail	
260	1.53	Bail	. 63	105	boat.	. 53	15	Rail	. 25	(9)	Rail	
164	(40	(4)	(4)	90 25	Rail	.65	1	Rail	(a)	(a)	Rail	(a)
366		,		90	Rail	100	5	Rail	. 20	0.00	Rail	100
300				114	Rail	.90	2	Rail	.08	(9)	Rail	G,
200 c		*********			Rail	. 25	(h)	(A)	(1)	17	Rail	1
116					Rail	(i)	30	Rail		107	Rail	1
126	129	Eatl	75	5	Rail	.25	4	Rail	. 20	120	Rail	1
275				í	Rail	.10	20	Rail	.25	120	Rail	
1:2	*****				Rail	. 35	20	Rail	.30	90	Rail	
115	196	Pail		2	Rail	. 15	1	Rail	.10	(6)	(b)	(3)
1.4	-			42	Rail	.40	42	Rail	.40	160	Rail	1
1.3		Rail	.07	5	Rail	. 20		Rail	.06	20	Team	
116	25	Kad	- 49	53	Rail	1.66	40	Rail	. 49	20	Rail	1
117	140	(4)	(4)	(a)	(a)	(a)	(a)	(a)	(a)	(a)		(a)
	75	Rad		(1)	(1)	(1)	,			(1)	Rail	

Bos reported.
 b Coke ovens located at works.
 Part of the ere is brought 6 miles at a cost of 10 cents per ton, and part 75 miles at a cost of 70

into per tes. d First of the coke is brought 125 miles at a cost of \$1.15 per ton, and part 375 miles at a cost of \$2.25 First of the cole is brought 1 mile at a cost of 31 cents per ton, and part 9 miles at a cost of 13 cents of the miles is brought 13 miles at a cost of 30 cents per ton, and part 400 miles at a cost of 30 cents per ton, and a cost of 30 cents per ton, and

quarries located at works. ere is brought 11 miles at a cost of 30 cents per ton, and part 60 miles at a cost of 55 Figs. of the column brought 142 miles at a cost of \$1.25 per ton, and part 241 miles at a cost of \$2.00

PIG IRON.

31

FABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

D .- CHEMICAL ANALYSIS OF ORE-Continued.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 3 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

Es-		0				Per	r cent.	-10		
lish- lish- ont ber.	Kind of ore.	Ore used (tons of 2, 240 pounds).	Cost.	Iron.	Manga- nese.	Phos- pho- rus.	Sul- phur.	Silica.	Alu- mina.	Lime.
- ((6)	a199.786	\$689,456	55, 000	, 950	.015	. 024	11. 450	(b)	(b)
33 {	(b)	(a)	(a)	38, 600	1,800	.022	. 034	4. 150	(6)	(6)
34	(b)		10, 265	55, 000	. 930	. 015	. 024	11. 450	(6)	(6)
35	Hematite	162, 689	10, 265 749, 718	54.500	(6)	.010	. 020	10.500	(6)	(6)
36	Brown hematite	58, 752	194, 669	50. 350	(6)	. 040	. 060	12. 980	(b)	(6)
37	Brown hematite	79, 945	262, 974	50, 350	(6)	.040	.060	12, 980	(6)	(6)
((b)	1, 326	2,598	36.000	. 130	.310	.040	12,000	******	
441	(b)	1, 903	5, 137	54. 000	*******	******		5, 000		
384	(b)	1, 077 3, 692	2,795	40.000			******	11.000	14.000	
- 11	(b)	49, 763	10, 859	50,000			. 300	11,000		
39	Hematite	118, 778	184, 546		(6)	(h)	(h)		(b)	(6)
	Spathic	1,862	401, 945 7, 220	49, 710	10. 120	Trace	(b) .257	(b) .570	(6)	e . 25
40 {	Manganiferous	498	1,746	22. 270	18. 610	.016	Trace	28. 880	(6)	(6)
41	Fossiliferous hema-	20, 302	38, 287	44. 400	. 190	. 530	.310	19. 090	5, 900	5, 850
42	tite. Fossiliferous hema-	69, 752	108, 137	42.520	(b)	.750	. 270	14.940	4.800	6. 220
43	tite.	(6)	(6)	(6)	(8)	(6)	(6)	(6)	(6)	(6)
10	(b)		a 5, 601	38, 350	.100	.780	.010	17.800	(b)	(6)
442	(b)		(a)	39. 850	(6)	.625	.010	13, 000	(6)	(6)
	(b)		(a)	49, 000	. 150	. 750	.090	14,000	(6)	(6)
45	(b)		(6)	(b)	(6)	(b)	(b)	(b)	(6)	(b)
46 }	Hematite	9, 110	36, 907	58, 492	. 630	2, 300		5,000	(6)	5. 51
405	Magnetite	17, 570	55, 754	64, 500	(6)	. 050	Trace	5, 500	3, 200	2, 30
(Magnetite		16, 596	66, 180	(b)	1.070		******	.700	2, 27
47 }	Hematite	12, 285	21, 499	44.310	Trace	. 430	(b)	(6)	(9)	6. 03
	Hematite	8,599	27, 947	55. 660	. 070	(6)	.110	(b)	1. 120	2.49
48	(b)	27, 748	131, 803 29, 674 77, 717	60,000	(6)	. 215	. 040	3.510	(6)	(6)
-31	Blackband	8, 460	29, 674	42. 630	(b)	. 189	.316	24, 750 4, 250	(b)	(b)
49}	Hematite	17, 630	25 410	55. 000 42. 000	(b) (b)	8. 430	(b)	12.000	(b) (b)	(b)
50	(b)	51, 851	25, 440 175, 641	57. 050	. 460	. 250	(b) (b)	6.000	(6)	(6)
51	Specular, magnetite, and hematite.	39, 332	161, 323	66. 760	(6)	.041	(6)	1. 620	(6)	(6)
52	Specular and hema- tite.	61, 016	335, 998	63. 000	(6)	, 120	. 050	6.000	(6)	(6)
53	Hematite	62, 711	315, 046	63, 000	(b)	.075	Trace	4. 500	(6)	(6)
54 2	Magnetite	1,772	5, 582	59.000	(6)	. 030	.700	9.000	(6)	(6)
55	(b)	32, 834	197, 006	60, 000	(6)	.030	020	5. 000 11. 000	(b)	(b)
	(b)	36, 374	159, 461	36,000	(b)	. 400	. 040	10.000	(6)	(6)
56	(b)	16, 383	61, 440	60,000	(b)	. 540	Trace Trace	6, 520	(6)	(6)
57	(b)	309	1,777	63, 000	. 783	.120	(6)	4. 250	(6)	. 10
58	Hematite	0, 424	56, 241	63, 000	. 530	. 075	/01	4.500	1.950	1.34
59	Hematite	17, 962	74, 890	60, 000	(b)	.009	. 025	4.000	(b)	(6)
60	Calcareous	142, 915	2:24, 203	38,000		1, 200		12,000	(6)	12,00
61 }	Ironstone	232	323	29.500	. 720	,300	. 030	17.000	1.860	4.00
62	Hematite	5, 441 65, 072	17, 569 82, 495	50. 350 (b)	(b)	(b)	.060 (b)	12, 980 (b)	(b)	(b)
63	Ironstone	25, 536	27, 346	(6)	(6)	(b)	(8)	(6)	(6)	(6)
- 1	Limonite	2,789	1, 243	33, 500	Trace	. 650	Trace	13, 000	d5.000	26.00
64 }	Limonite	1, 531	1,078	24. 500	Traco	. 550	Trace	5, 000	d3. 000	
6	(b)	5, 910	26, 891	65, 000	(6)	. 180	Trace	4.000	(6)	(b)
65 3	(b)	5, 889	17, 961	59, 000	(6)	. 250	Trace	8. 500	(6)	(b)
((b)	1, 190	2, 499	38, 000	(6)	. 500	Trace	10.000	(6)	(6)
(Specular	8, 426	(e)	62, 860	(b)	.081	Trace	4, 790	(6)	(6)
66	Hematite		#300, 891	60.570	(b)	. 120	. 025	7. 280	(6)	(6)
5	Hematite	16,852	(e)	40. 340	(6)	. 210	.010		(b)	(6)
67 5	Specular	32, 119	172, 553 45, 125	66, 400	(6)	.110	(b) (b)	3, 600	(b)	(6)
97 6 1										

a Quantities and costs of the several varieties of ores not separately reported. b Not reported. c Limestone. d Aluminium.

s Costs of the several varieties of ores not separately reported.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

D .- CHEMICAL ANALYSIS OF ORE-Continued.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

lish-										
ment nam- ber.	Kind of ore.	(tons of 2,240 pounds).	Cost.	Iron.	Manga- nese.	Phos- pho- rus.	Sul- phur.	Silica	Alu- mina.	Lime.
	Magnetite	5, 655	\$27,710	60, 000	(a)	.090	. 030	7.000	(a)	(a)
69}	Hematite	53, 890	228, 118	60.000	(a)	. 215	.040	3, 540	(a)	(a)
(Blackband	2, 841	10, 655	45. 000	(a)	. 210	. 220	22, 700	(a)	(a)
- 5	Limonite	10, 368	10, 655 32, 256 25, 805	44. 000	(a)	.150	.440	14. 000	(a)	(a)
703	(4)	10, 240	48, 640	62,000	(a)	.700	(a)	4, 000	(a)	(a)
71	Specular and hema- tite.	93, 986	422, 935	62,000	(a) (a)	. 095	Trace	7.000	(a) (a)	(a)
	Hematite	8, 886	34,019	42,000	(a)	. 200	Trace	18,000	(a)	(a)
72 3	Hematite	35, 191	216, 632	62.000	(a)	. 200	Trace	6. 500	(a)	(a)
	Carbonate	3, 112	10, 526	35. 000	(a)	. 300	. 500	15.000	(a)	(a)
-5	(a)	3,747	24, 543	60. 650	(a)	. 100	(a)	20. 000	-(a)	(a)
73 }	Hematite	5, 922 15, 702	17, 174 67, 335	40. 000 55. 000	(a)	1. 150	(a) 2,000	10.000	(a) (a)	(a)
74	(a)	60, 852	243, 408	(a)	(a) (a)	(a)	(a)	(a)	(a)	(a) (a)
	Specular	10, 247	57, 241	67.000	(a)	.040	.050	4.500	(a)	(a)
75 }	Hematite		162, 285	60, 000	(a)	.060	. 050	5. 000	(a)	(a)
76	Specular, magnetite, and hematite.	40, 395	187, 622	61. 100	(a)	.218	.040	3. 540	(a)	(a)
77 }	Specular	15, 687	93, 558	62,700	(a)	. 090	Trace	4.740	(a)	(a)
. 3	Hematite	17, 571	101, 352	62, 500	(a)	.065	. 022	3, 500	(a)	(a)
	Magnetite	435	2, 536 240	65, 890 64, 350	(a)	.200	Trace	3. 700 5. 000	(a)	(a)
78	Carbonate	195	414	48, 000	(a) (a)	.010	1.500	10.000	(a) (a)	(a)
- 11	Hematite		1, 292	37,000	(a)	.700	Trace	35. 000	(a)	(a)
il	Magnetite	435	1, 197	50, 366	(a)	. 135	(a)	24. 370	(a)	(a)
79	Fossiliferous	1, 445	3, 251	45, 110	(a)	,247	(a)	12.510	(a)	(a)
19	(a)	610	3, 936	36,000	(a)	(a)	7.800	(a)	(a)	(a)
U	Hemarite	561	1, 683	(a)	(a)	(a)	(a)	19, 700	(a)	(a)
80 5	Fossiliferous		10, 052	(a)	(a)	(a)	(a)	(a)	(a)	(a)
5	Hematite	2,717 9,528	8, 800	(a)	(a)	(a)	(a)	6.000	(a)	(a)
81 2	Hematite	7, 062	54, 786	45,000	(a)	.200	(4)	23. 000	(a)	(a)
0.7	Carbonate	11,984	24, 576 36, 192	35,000	(a)	.160	. 130	15, 000	(a)	(a)
82	(a)	3,942	10, 967	(a)	(a)	(a)	(a)	(a)	(a)	(a)
(Magnetite	2, 172	11, 892	60.000	(a)	(a)	(a)	4.000	(a)	(a)
83 3	Hematite	953	3, 335	45, 000	(a)	(a)	(4)	10.000	(a)	(a)
((4)	192	480	38, 000	(a)	(a)	(a)	10.000	(a)	(a)
2.5	Magnetite	2,407	7, 509	50, 366	(4)	. 135	(a)	24. 370	(a)	(a)
843	Fossiliferous	4, 960 3, 686	11,159 16,002	45. 110	(a)	. 247 (a)	(a) (a)	12.510 19.780	(a) (a)	(a) (a)
3	(a)	106	625	(a)	(a) (a)	(a)	(4)	(a)	(a)	(4)
85	Hematite	3, 860	6, 168	(a)	(a)	(a)	(a)	(a)	(a)	(4)
86	Specular and hema- tite.	29,061	112, 637	60, 000	(a)	.300	.030	4.000	(a)	(a)
87 5	Specular	1,734	5, 635	49.000	(a)	.080	(a)	21,000	(a)	(a)
0.5	Hematite	12, 457	67, 134	61.000	(a)	. 040	(a)	7.140	(a)	(a)
88	Hematite	52, 934	132, 335	43, 030	(a)	. 250	(a)	26, 920	(a)	(4)
89	(a)	1,703 62,370	8, 945 326, 550	59. 720	(a)	(a)	(a)	5. 500	(a) (a)	(a) (a)
90	Specular and hema- tite.	59, 656	249, 564	60. 000	(a)	.070	Trace	4. 750	(a)	(a)
91 \$	Soft red fossiliferous. Hard red fossiliferous	b 94, 218	60,931 (b)	47. 780 35. 460	(a) (a)	(a)	(a)	16, 330 11, 480	3, 170 5, 670	Trace 29, 430
92 \$	Soft fossiliferous	41, 303	36, 714	48. 350	(a)	. 244	(a)	10.640	(a)	. 730
1	Hard fossiliferous		39, 145	39, 180	(a)	. 292	(a)	10. 120	(a)	16. 460
93	Brown hematite	15, 158	21, 848	49, 620	(a)	.750	(a)	19.500	(a)	(a)
94	Brown hematite	74, 804	117, 427 37, 998	46, 820	(a)	050		10.830	5. 660	. 080
95 }	Red fossiliferous		13, 440	48, 930	(a)	. 259	******	19.340 22.500	(a)	(a)
6	Brown hematite		28, 340	50, 000	(a) (a)	1. 250	(a)	13, 000	(a)	(a)
580	(a)		29, 632	43, 750	(a)	1. 800	(a)	17,000	(a)	8, 000
-1	Brown hematite		2, 783	48, 250	(a)	.160	(a)	10.000	(a)	(a)
21	Hard red hematite		14, 021	54.340	(a)	.424		7.410	(a)	. 640
8.5	Soft red hematite	5, 460	7, 549	56.000				(a)	(a)	5, 760

s Not reported.

3 Quantities and sosts of the several varieties of ores not separately reported.

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

D .- CHEMICAL ANALYSIS OF ORE-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 55 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

Es-				1		Per	cent. o	r-		
tab- lish- nent num- ber.	Kind of ore.	(tons of 2,240 pounds)	Cost	Iron.	Manga- nese.	Phos- pho- rus.	Sul- phur.	Silica.	Alu- mins.	Lime.
98	Brown hematite	16, 597	\$30, 325	47, 500	(a)	.550	Tite.	12.500	(a)	(a)
80	Soft red fossiliferous.		12, 400	52,000	(a)	. 240		16, 000	(a)	(4)
200	Red fossiliferous		21, 014	39, 000	(a)	, 280		10,000	(a)	14. 000
)	Brown hematite	366	413	48, 000	(a)	. 600		12,000	(a)	(a)
Ì	Red hematite fossi- liferous, hard.	73, 748	63, 587	38. 230	(a)	(a)	(a)	8. 990	(a)	16. 610
	Red hematite	47,720	41, 128	50, 980	(a)	(a)	(a)	18.030	(a)	(a)
100	Brown hematite	2,707	2, 508	51, 310	(a)	(a)	(a)	9, 790	2. 900	. 36
1	Red hematite fossi- liferous, soft.	17, 475	15, 067	51. 180	(a)	(a)	(a)	13. 420	(a)	(a)
Ì	Red hematite fossi- liferous, hard.	42, 320	35, 760	38. 230	(a)	(a)	(a)	8,996	(a)	16. 61
101	Red hematite fossi- liferous, soft.	9, 345	7, 896	51. 180	(a)	(a)	(a)	13, 420	(a)	(a)
	Red hematite	44, 021	37, 199	50. 980	(a)	(a)	(a)	18,030	(a)	(a)
- (Brown hematite	11, 446	11, 870	51. 310	(a)	(a)	(a)	9, 790	2. 900	. 360
(Hard red hematite	3, 777	3, 730	28, 000 55, 000	(a)	. 300	(a)	10,000 15,000	(a)	644.00
102 }	Soft red hematite	1,573 2,201	4, 894	48,000	(a) (a)	. 250	(a)	25, 000	(a)	(a)
	Brown hematite		14, 093	26, 600	(a)	.380	(a)	8, 210	(a) (a)	(a)
. (Red fossiliferous, hard		19, 444	49. 430	(a)	, 050	(4)	13, 090	(a)	(a) (a)
103	Red fossiliferous, soft	8, 351	18, 246	55, 240	(a)	. 090		12, 800	(a)	(a)
1	Brown hematite	37, 810	73, 905	50, 540	(a)	. 290	.010	.120	(a)	(a)
3	Soft red hematite	743	1, 615	56, 000	(a)	.350		13,000	(a)	(4)
104	Brown hematite	3, 033	5, 990	48, 000	(a)	. 250		25.000	(a)	(a)
105	Soft and hard fossi-	7, 252	11, 023	38. 800	(a)	.500	.020	8. 000	(a)	(a)
	Fossiliferous	2,196	4, 787	50,000	(a)	.450	. 020	6,000	(a)	(a)
	Hard fossiliferous	378	511	33,000	(a)	.350	.010	5. 000	(a)	(a)
100	Soft fossiliferous	605	974	46. 000	(a)	. 400	. 020	8.000	(a)	(a)
- 1	Brown hematite	2, 982	6, 441	45. 000	(a)	.400	.020	12, 000	(a)	(a)
- 7	Red bematite		141,000	51.000	(a)	. 290	******	11.500	(a)	(a)
107	Sort red hematite		54, 000	54 000	(a)	.740	******	11.000	(a)	(a)
101	Hematite	24, 000	48,000	43.000	(a)	.510		18.000	(a)	(a)
- (Brown hematite	24, 000 58, 480	60, 000 124, 243	51,000	(a) (a)	300	(a)	15, 000	(a)	(a)
	Homatite	97, 034	126, 239	30, 000	(a)	.400	(a)	10,000	(a)	(a)
108	Hematite	24, 984	53, 769	47.000	(a)	.700	(a)	15,000	(a)	18.00
	Brown hematite	83, 297	162, 466	52, 528	. 564	.101	. 191	8, 420	5, 327	1.51
100	Brown hematite	63, 600	103, 668	48.090		.482		15, 160	2, 810	. 28
111	Brown hematite	28, 761	50, 967	42.500	(a)	.013		15,000	(a)	(a)
112	Brown hematite	93, 000	187, 500	44.000	(a)	. 050	.003	13,000	(a)	(a)
113	Brown bematite	96, 709	217, 594	42,000	(a)	. 003		23, 500	(a)	(a)
	Brown hematite	21,736	34, 058	45. 532	. 968	1.577	. 624	11.500	7. 475	. 95
114 }	Magnetite	4, 253	14, 460	54. 480		. 055	(a)	14.550	(a)	(a)
	(4)	e 70, 169	c154, 773	38, 000	3.000	(a)	******		(a)	(4)
113 }	Swedish magnetite	(e)	(0)	62. 000	(a)	8, 000	11000		(a)	(a)
116	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
ut	(4)	(a)	(a)	(4)	(a)	(a)	(a)	(a)	(a)	(a)
	Limonite	5, 031	2, 534	34.500	Trace	. 650	Trace	13.000	d5, 000	e 6. 000
118	Limonite	917	459	32,000	(a)	. 550	Trace	8,000	d4. 000	e16, 50

lime. d costs of the several varieties of ore not separately reported.

TABLE 1.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

E.-QUANTITY AND COST OF MATERIALS CHARGED INTO THE FURNACE.

[Establishments numbers 1 to 7. 9 to 32, 41, 42, 45 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 32 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

ab-		Tons o	f 2, 240 p	ounds.		-		(Cost.		
ent im- er.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Total.
1	7, 116		a 2, 580		62, 804 622, 576	\$29, 827		a \$289		c\$21, 116	\$51, 23
2	40, 331	*******	1, 927		622, 576	99, 948		4, 314	*******	6225, 593	329, 85
3	21, 198		1, 886		b11, 279	81, 645		1, 792		b 62, 034	145, 47
5	25, 429		3, 238 1, 700		613, 487	71, 658 15, 683		2, 228 850		b 63, 811 b 27, 000	137, 69 43, 53
6	7, 650 7, 360	******	1, 100		b 5 174	21, 344		825		6 28, 974	51, 14
7	3, 945	*******	791		h 2 054	15, 760		989		b 18, 400	35, 14
8	32, 492		3, 350		b 2, 054 b13, 566	28, 528		3, 384		b 79, 784	111, 69
9	30, 413	2, 789	7, 440	20,652			\$5, 987	7,902	\$82, 851		A
10	84, 995	1, 575	18, 378	20, 652 55, 107		424, 661	3, 441	23, 678	\$82, 851 265, 907		717, 68
11	34, 022	1, 311	6,988	20, 610	6, 480	180, 317	3, 736	5, 940	64, 632	9, 435	264, 06
12	35, 047	2, 951	8, 119	22, 321		213, 410	17, 699	8, 170	65, 218		304, 49
13	36, 473	1,036	9,678	29,569		220, 658	3, 367	10,080	79,508 289,740		313, 61
14	145, 700		41, 496 19, 721	107, 790 37, 067	1, 875	796, 438	*******	32, 533	289, 740	2, 790	1, 118, 71
15	52, 499	4, 480	19, 721	37, 067	1,875	295, 377	11,061	20, 491	110, 407		440, 12
16	119, 938	1,000	25,000	71,875	0 000	085, 959	3, 800	25, 200	261, 625	3,000	976, 58
17	48, 000 38, 917	9 719	16,000 14,927	33, 036 37, 500	2, 679	336, 000 248, 446	8, 526	12, 000 16, 133	90, 384	3,000	462, 00 363, 48
19	41, 979	3, 742 325	10, 766	25 408	3, 607	248, 824	1, 800	10, 100	75, 928	4, 098	341, 62
20	79, 716	320	21, 335	25, 406 19, 554	d21, 900	394, 594	1, 200	10, 977 21, 506	76, 650	d 75, 555	568, 30
21	35, 295		9, 225	18, 571	war, 200	221, 719		9, 225	40, 560	2 10,000	271.50
22	40, 186		10, 754	9, 857	d11, 040	221, 021		12, 045	48, 024	£ 38, 640	319, 73
23 24	49, 276		9, 351 7, 749 8, 978	26, 007	4,023	264, 681		7, 373	72,454	9, 938	354, 44
24	39, 699		7,749	26, 317 27, 285	4, 023 1, 673	216, 404		5, 851	72, 454 72, 214	3,711	298, 18 317, 57
25	45, 075		8,978	27, 285	3, 948	227, 580		6, 630	76, 960	6, 408	317, 57
26	51, 392		10, 735	34, 965	6, 490	285, 119 386, 129		7, 903	98, 126	8, 803	399, 95
27	67, 662	*******	19, 523	57,771	839		*******	15, 540	167, 984	1, 083	
28 29	75, 678	2, 146 5, 277	19, 523 35, 797 20, 124	52, 304		457, 096 303, 907	796	28, 996	123, 253 130, 029		
30	47, 388 33, 803	5, 277	9, 680	50, 333 25, 764		193, 478	10,554	21, 929 10, 234	69, 527		466, 41 275, 03
31	31, 700	580	9,441	25,748		178, 335	1,740	10, 526	73, 457		264, 03
32	34, 879	4 351	14,019	29, 941	881	201, 244	8, 695	14, 907	84, 559	986	310, 30
33	199, 786	(0)	55, 464	122 968		689 456	(e)	23, 433	312 601		
34	€ 2, 869	(e)	869	1,644		e689, 456 e 10, 265	(e)	401	312,601 4,800	CONTRACTOR OF	15.40
35	162, 689		38, 532	89, 907		749,718		22,668	274, 596		1,046,98
36	58, 752	1, 164	10, 318	37, 773		194, 669	4, 728	5, 425	87, 919		292, 74
37	79, 945	5, 302	14, 678	55, 087		262, 974	9, 980	7,718	125, 875		406, 54
	/57,981	5, 392	14, 186	46, 312 59, 783		f206, 694	19, 111	7,009 16,588	84, 509 160, 778	1,914	317, 32
40	118,778		20, 924 593	1, 156	787	401, 945		606	5, 600	1,914	581, 22
41	2, 360 20, 302		4, 866	7, 407	d 5, 395	8, 966 38, 287		3, 893	32, 354	d 18, 883	15, 17 93, 41
42	69, 752		20, 268		d12, 488	108, 137		15, 201	146, 865	d 44, 941	315, 14
43	(g)	(g)	(g)	(g)	(g)	(g)	(g)	(g)	(g)	(g)	(9)
44	e 3, 377	(e)	557	1, 417	127	e 5, 601	(6)	257	4, 139	******	9, 99
45	(a)	(0)	(g)	(a)	(g)	(9)		(a)	(g)	(9)	(9)
46	26, 680	475	8, 945	1, 727	d21, 322	92, 661	3, 818	9, 706	8, 796	d 80, 725	195, 70
47	24, 572		4, 680	12, 556	4 4, 680	66,042	*******	4, 680	49, 140	d 16, 380	136, 24
48	36, 208 27, 806	5, 246	15, 800	29, 464	5, 179	161, 477	15, 738	9,500	92, 400	9, 280	288, 31
49	27, 806	3, 048	10, 227	19, 373	4, 879	103, 157	15, 738 7, 620 10, 427	10, 227 13, 763	92, 400 65, 094 144, 288	10, 928	197, 03
50	51, 851	4, 858	12, 957	35, 965		175, 641	10, 427	13, 703	190 050		344, 11
51	39, 332	7, 219	8, 338	29, 297	*******	161, 323	17,000	11,142 31,399	139, 658	*******	329, 12
52 53	61,016	21, 631 35, 096	36,091	66, 755	697	335, 998	52, 131	92 596	173, 619 180, 699	781	593, 14 618, 97
54	34, 606	11, 299	31,773 13,208	6, 932	424, 909	315, 046 202, 588	98, 922 17, 764	23, 526 11, 226	31,058	d 74, 728	337, 36
	e 36, 374	(e)	15, 836	30, 708		e159, 461	(e)	14, 915	50, 617	18, 140	233, 99
56	27, 432	3, 082	10,989	21, 444		102, 807	5, 641	8,307	50, 196		166, 95
57	309		147	174		1,777		162	439		2, 37
58	0 494	9, 271	9, 256	9 900		56, 241	97 813	9, 256	21 622		114, 93

a Oyster shells.
b Charcoal.
c Represents the cost of wood entering into the charcoal.
thro charcoal is inseparably combined with furnace labor.
d Anthracite coal.
c The quantity and cost of cinder, scrap, etc., are inseparably combined with quantity and cost of ore.
fIncluding 220 tons of manganese, costing \$759.
g Not reported.

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TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

F .- PROPORTIONS OF MATERIALS CHARGED INTO THE FURNACE.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

Es-	Tons o	f materials	product.	ounds) to	1 ton of		Cost of	materials	per ton.	
lish- ment num- ber.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.
1	2.462		a.893		ð.970	\$4, 192				c \$7.53
2	1.617		.077		6.905	2.478		2, 239		b 9: 99
3	1.800		.160	*******	b.957	3, 852	********	. 950		b 5, 50
4	1.882		.240		b.998	2. 818	*********	. 688		b 4. 73
5	2, 550		. 567		b 1. 339	2,050		. 500		b 6.72
6	2.944		. 440	******	b 2, 070	2. 900	*******	. 750		b 5, 60
7	2.494		. 500		b 1. 298	3, 995	*******	1. 250		b 8, 93
8	2. 257	*********	. 233	*********	6.942	. 878		1.010		b 5, 88
9	1. 634	, 150	. 400	1.109	*******	4.771	\$2.147	1,062	\$4.012	
10	1, 650	. 031	. 357	1.070	*******	4. 996	2. 185	1, 288	4, 825	********
11	1.614	.062	, 332	. 978	. 308	5. 300	2. 850	. 850	3, 136	1.43
12	1. 380	.116	. 320	. 879	*******	6, 089	5.998	1,006	2. 922	*******
13	1. 474	.042	.391	1. 195	*******	6. 050	3. 250	1. 042	2, 689	*******
14	1.722	120	. 490	1. 274	057	5, 466	0 400	: 784	2.688	
15	1.597	. 136	. 600	1.127	. 057	5. 626 5. 719	2. 469 3. 800	1.039	2.979 3.640	1.48
17	1, 600	.0.4	. 534	1. 101	.080	7,000	0.800		3, 360	********
18	1. 513	.146	. 581	1.458	.000	6.381	2, 278	1.081		1. 12
19	1.649	.013	. 423	. 998	.142	5.927	5, 538	1.001	2.410 2.989	*******
20	1, 820	. 013	. 488	. 446	d. 500	4. 950	0, 000	1,008	3, 920	4 3. 45
21	1. 645		. 430	. 865	4.500	6, 282	*******	1,000	2, 184	4 3. 40
28	1. 820		. 487	.446	d.500	5. 500			4, 872	4 9 50
23	1. 621		. 308	. 856	. 132	5. 371			2, 786	d 3.50
24	1.641		. 321	1 088	. 069	5. 451		. 755	2.744	2. 21
25	1.661		. 331	1.006	.145	5.049		.738	2. 821	1. 62
26	1.633		. 341	1.111	.206	5. 548		736	2, 806	1. 35
27	1. 625	******	. 469	1.388	.020	5. 707		.796	2, 908	1. 29
28	1, 728	. 049	. 817	1. 194	.020	6. 040	. 371	.810	2. 356	1.20
29	1.443	. 161	. 612	1.533		6, 413	2,000	1.090	2. 583	.,
30	1. 595	. 028	. 457	1. 216		5: 724	3. 000	1. 057	2,699	3
31	1. 565	.028	. 466	1. 271		5. 626	3, 000	1.115	2. 853	********
32	1. 415	. 176	. 569	1. 215	. 036	5.770	1,998	1.063	2. 824	1.11
33	e 1. 863	(e)	.517	1.146		e 3, 451	(e)	. 422	2,542	
34	e 1. 903	(e)	. 576	1,000			(4)	.461	2.920	
35	1. 900		. 450	1.019		4.608		. 588	3. 054	
36	1, 853	. 037	. 325	1. 191		3.313	4.062	. 526	2.828	
37	1.761	.117	. 323	1. 213		3, 289	1. 882	. 526	2. 285	
38	/1.701	. 158	.416	1, 358		\$ 3.565	3.544	. 494	1.825	
39	1.887		. 333	. 950	.013	3, 384		. 793	2, 689	2,43
40	2. 212		. 536	1.083		3.799		1, 022	4.844	
41	2.447		. 587	. 893	d. 650	1,886		. 800	4.368	d 3.50
42	2.373		. 690	. 924	d. 425			. 750	5.410	d 3, 59
43	e 2. 426	(9)	(9)	(g)	(g)	(g)	(9)	(g)	(9)	(g)
44	e 2. 426	(e)	. 400	1.018		e 1, 659	(e)	.461	2, 921	
45	(g)	(g)	(9)	(9)	(g)	(g)	(9)	(9)	(g)	(g)
46	1.672	.030	. 561	.108	d 1. 336	3, 473	8. 038	1. 985	5,093	4 3.78
47	2. 143		. 408	1.093	d.408	2.688	*********	1,000	3, 920	d 3, 50
48	1.527	. 221	. 666	1. 242	. 218	4.460	3.000	.601	3. 136	1.79
49	1.566	.171	. 576	1.091	. 275	3.710	2,500	1.000	3, 360	2.24
50	1.599	. 150	. 400	1.110	*******	3. 387	2.146	1.062	4,012	
51	1.582	. 290	. 335	1.178	*********	4.102	2, 355	1. 336	4.767	
52	1. 162	.412	. 688	1. 154		5. 507	2.410	. 870	2, 867	
53	1.098	. 615	. 557	1. 169	. 012	5. 024	2,819	. 740	2.707	1.15
54	1,509	. 493	. 576	. 302	d 1.086	5, 854	1. 572	. 850	4.480	4 3.00
55	e 1.649	(0)	. 718	1.392		e 4. 384	(e)	. 942	1.941	
56 57	1.930	. 217	.774	1, 509		3.748	1. 830	. 756	2.341	
	1. 585		. 754	. 892	********	5, 751		1.102	2. 523	********
58	. 810	. 826	. 825	, 882		5. 968	3, 000	1,000	2. 184	
53	1, 165	. 482	. 639	1, 232	d . 002	4. 169	3, 250	. 821	3.080	d 3. 47

a Oyster shells.

H. Ex. 265

Charcoal.
 Represents the cost of wood entering into the charcoal.
 The labor cost of converting the wood into charcoal is inseparably combined with furnace labor.
 Anthracite coal.
 The quantity and cost of cinder, acrap, etc., are inseparably combined with quantity and cost of ore.
 Including managanese.
 Not reported.

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Table L-10ST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES-Continued.

F .- PROPORTIONS OF WATEFIALS CHARGED INTO THE FURNACE. - Concluded.

187 182 213 1.136 0.22 \$1.500 \$1.226 \$0.314 \$3.530 \$1.125 \$1.23 1.036 \$1.226 \$0.314 \$3.530 \$1.125 \$1.23 1.035 \$1.235	2008-0	Cinateriale	2,200 per product.	enda) to	l ton of		Cost of	materials	per ton.	
1.15)re.	serso.		Coke.	Coal	Ore.	scrap,		Coke.	Coal.
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2. 1.569 2.554 2.752 3.029 800 1.064 2. 2. 3.659 4.735 2.750 7.79 1.107 3.14 3.19 3.19 3.66 4.65 3.137 2.213 881 3.222 62 3.13 3.57 3.411 0.46 4.1.401 1.700 2.000 850 3.540 3.13 3.57 3.66 1.68 3.876 3.101 800 2.770 3.13 3.57 3.66 1.68 3.876 3.101 800 2.770 3.13 3.57 3.58 1.153 3.128 3.230 906 3.650 3.14 3.15 1.22 2.566 1.742 400 3.650 3.15 3.162 5.236 1.742 400 3.650 3.16 3.16 3.16 3.16 3.16 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 4.50 1.825 5.236 1.742 400 3.650 3.10 5.25 1.733 1.570 6.655 3.948 3.10 5.25 1.733 1.570 6.655 3.948 3.10 3.10 3.10 3.10	: 30			I. 169	*******					
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a hand with quantity and cost of ore.

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TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

G.-GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 99 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 69, 64, 115, 117, and 118 are on the continent of Europe; and numbers 35 to 39, 61 to 63, and 116 are in Great Britain.—Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Estab- lishment number.	Materials.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
1	a \$51, 232	a \$10, 371	\$2, 200	\$2,892	\$250	\$66, 945
2 3	329, 835	29, 795	6, 500	11,964	1, 105	379, 219
3	145, 471	14, 568	3, 100	5, 889	1, 250 1, 217	170, 278
4	137, 697	41, 818	10, 220	7,706	1, 217	198, 658
5	43, 533	5, 797 7, 330	1, 600 2, 200	3, 998 2, 300	1, 400 150	56, 328
6 7	51, 143 35, 149	2, 533	800	350	200	63, 123
8	111, 696	21, 040	7, 596	7, 164	500	39, 03: 147, 996
9	241, 839	22, 969	2,444	2,991	657	270, 900
10	717, 687	78, 186	12,000	19, 111	6, 600	832, 984
11	264, 060	33, 199	2, 600	5, 059	210	305, 128
12	304, 497	24, 747	3, 400	10, 244	2, 047	344, 935
13	313, 613	28, 384	2, 400	4, 213	1, 500	350, 110
14	1, 118, 711	97, 754	15, 026	42, 310	1, 920	1, 275, 721
15	440, 126	48, 992	4, 458	15, 909	1, 280	510, 765
16	976, 584 462, 000	104, 953 45, 000	10, 600 9, 500	18, 221 16, 500	4,000	1, 113, 758
18	363, 489	42, 228	4, 876	20, 404	1, 288	533, 578 422, 283
19	341, 627	42, 381	6, 600	10, 593	1, 500	402, 701
20	568, 305	54, 750	4,000	21,100	1, 200	650, 150
21 22	271, 504	24, 770	3, 250	11,000	875	311, 399
22	319, 730	27,600	2, 000 5, 520	11,040	600	360, 970
23	354, 446	41, 445	5, 520	6, 321	500	408, 233
24	298, 180	27, 960	2, 100 3, 900	7,692	502	336, 434
25 26	317, 578	38, 937	3, 900	15, 700	526 526	376, 650
20	399, 951 570, 736	63, 844	13, 333	14, 685 38, 540	614	463, 237 687, 067
27 28	610, 141	50, 400	2, 116	b 60, 225	(6)	722, 883
29	466, 419	60, 152	6, 387	32, 590	794	560, 341
30	275, 039	28, 279	1,750	8, 852	- 2,000	315, 920
31	264, 038	27, 758	1, 750	8, 695	1, 250	303, 51
32	310, 391	46, 759	2, 705	22, 252	794	382, 90
33	1, 025, 490	c 44, 853	(d)	d44,715	(e)	f 1, 115, 05
34 35	15, 466	78, 091	(d) 1, 284	d 796	(e)	f 16, 93; h 1, 150, 24
36	1, 046, 982	19, 047	747	g 23, 890 13, 447	(9)	326, 343
37	406, 547	27, 385	676	26, 324	527	461, 450
38	317, 323	25, 336	4, 919	17, 653	540	355, 771
39	581, 225	44, 661	3, 420	13, 347	1, 978	641, 63
40	15, 172	767	63	52	31	16, 08
41	93, 417	17, 161	3, 850	2, 522	200	117, 150
42	315, 144	58, 272	7, 900	18, 342	686	339, 44
43	(6)	(e) e 651	(e) (d)	(e) d 672	(e)	(e)
45	9, 997	(e)	(e) -	(e) d 0/2	(e) (e)	f 11, 320
46	195, 706	34, 071	1, 130	9, 917	2, 600	243, 420
47	136, 242	19, 923	5, 064	5,712	563	167, 504
48	288, 395	34, 722	2, 500	6, 360	(2)	f 331, 977
49	197, 026	29, 757	2, 625	6, 168	522	236, 098
50	344, 119	40, 002	4, 256	5, 209	1, 143	394, 729
51	329, 123	42, 459	3, 000	4, 914	1, 560	381, 056
52 53	593, 147	51, 585 75, 086	2, 700 6, 300	36, 626	1, 581 740	685, 636
54	618, 974 337, 364	29, 810	6, 280	16, 546 14, 796	500	717, 646 388, 750
65	233, 993	32, 033	3, 286	12, 954	900	283, 166
56	166, 951	17, 994	6, 462	7, 107	528	199, 04:

a The labor coat of converting wood into charcoal is not included in materials, but is inseparably combined with furnace labor.

b The expenditures for taxes are inseparably combined with those for supplier and repairs. The cost of repairs for this establishment was unusually high during the period covered by this investigation.

c Furnace labor proper only.

d The expenditures for ordinary labor and officials and clerks are inseparably combined with those for supplies and repairs.

s Not reported.

f Not including taxes.

g The expenditures for taxes and insurance are inseparably combined with those for supplies and repairs.

repairs.
A Including insurance.
I Taxes not paid by lessee of furnace.

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TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

HI.—ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 7,9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 33, 61 to 63, and 116 are in Great Britain.—Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Es			Mate	orials.					G		
tab- lish- ment num- ber.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Total	Labor.	Officials and olerks.	Supplies and repairs.	Taxes.	Total of all cost.
	\$10, 321		a \$0, 100		b \$7, 307	c\$17, 728	c#3, 589	80. 761	\$1.001	20, 086	\$23, 165
2	4.007		. 173		d 9. 043	13. 223	1. 194	. 261	. 480	. 044	15, 202
8	6. 931		. 152		d 5. 267	12. 350	1. 237	. 263	. 500	. 106	14. 456
4	5. 303		. 165		d 1 722	10.190	8. 094	. 756	. 570	.090	14.700
5	5. 228		. 283		d 9. 000	14.511	1.932	. 533	1. 333	. 467	18.776
6	8. 538		. 330		d 11.589	20. 457	2. 932	. 880	. 920	. 060	25. 249
7	9. 962	•••••	. 625		d 11. 631	22. 218	1.601	. 506	. 221	. 127	24.673
8	1.981	\$0.322	. 235 . 425		d 5. 541	7.757	1.461	. 528	. 498	. 035	10. 279
.9	7, 793 8, 245	. 067	. 423	\$4.451 5.163		12. 993 13. 935	1. 234 1. 518	. 131	. 161 . 371	.035	14. 554 16. 178
10 11	8, 556	.177	. 282	3. 103	.448	12.530	1.575	. 124	.240	.010	14. 479
12	8. 404	. 697	. 322	2. 568	. 740	11.991	. 975	.134	.403	.081	13.584
13	8. 919	. 136	.407	3, 214		12, 676	1.147	.097	170	.061	14. 151
14	9.412		. 834	3.424		13, 220	1, 155	. 178	. 500	. 023	15. 076
15	8.984	. 336	. 623	8. 358	.085	13, 386	1, 490	. 136	. 484	. 039	15. 535
16	9, 413	. 032	. 346	3, 589		13. 399	1.440	. 137	. 250	. 055	15, 281
17	11. 200	. 	. 400	3.700	.100	15. 400	1.500	. 817	. 550	. 019	17.786
18	9, 662	. 332	. 627	3. 515	¦	14.136	1.642	. 190	. 793	. 050	16. 811
19	9. 777	. 071	. 431	2,984	. 161	18. 424	1.665	. 250	. 416	. 059	15. 828
20	9. 009		. 491	1. 750	e 1. 725	12. 975	1. 250	. 091	. 500	. 028	14. 844
21	10. 337		. 430	1.891		12.658	1. 155	. 151	. 518	.041	14.518
22	10.010		. 545 . 243	2. 175 2. 384	e 1. 750	14, 480	1. 250 1. 364	. 091	. 500	. 027	16.848
23	8, 709 8, 946		.243	2. 384	. 827 . 154	11.668 12.327	1.156	. 182	. 208 . 318	. 016 . 021	13. 433 13. 909
24	8, 388	· · · · · · · · · · · ·	.244	2.837	.236	11. 705	1.435	. 144	. 579	.019	13.882
25 26	9. 059		.251	3. 118	. 280	12.708	1.403	124	. 466	.017	14.718
27	9. 274		.373	4. 035	. 026	13, 708	1.534	. 320	.926	.015	16, 503
28	10. 436	.018	. 662	2.814		13, 930	1. 151	.048	£ 1.875	S	16. 504
29	9. 253	. 321	. 668	8, 959		14, 201	1.831	. 195	. 992	. 024	17, 243
30	9. 129	.085	. 483	3. 280		12.977	1.334	. 083	. 418	. 094	14.906
31	8, 803	.086	. 519	3. 626		13.034	1.370	.086	. 429	.062	14. 981
32	8. 165	. 353	. 605	3. 431	.040	12.594	1.897	.110	. 903	. 032	15. 536
33	g 6. 427	(g)	. 218	2.914		9.559	A.418	(6)	6.417	(j)	k 10. 394
34	g 6. 807	(g)	. 266	3, 183		10. 256	λ.444	(6)	i.528	(j) (b)	k 11. 228
35	8, 756		. 265	3. 207 2. 772		12. 228	. 912	. 015	1.279	(6)	m 13. 434
36	6. 138 5. 791	. 149	. 171	2.772		9. 230 8. 953	.601	.024	. 424	.011	10. 290 10. 163
37	n 6. 063	.560	. 206	2. 479		9, 308	. 743	.144	. 518	.012	10. 729
38 39	6. 387		. 264	2. 555	. 030	9. 236	710	.054	. 212	. 032	10. 244
40	8, 403		.568	5. 248	.030	14. 219	719	.059	.049	. 029	15, 075
41	4,615		. 469	3. 900	s 2. 276	11. 260	2.069	.464	. 804	.024	14. 121
42	3, 680		.517	4.997	¢ 1. 529	10.723	1.983	.238	. 624	.023	13. 591
43	g 3. 630	(g)	. 184	2.971		6. 785	A. 470	(6)	i.481	(i)	k 7. 736
4	g 4. 024	Ğ	. 185	2, 973	l	7. 182	h.467	(6)	6.483	(3)	k 8. 132
45	94.611	(9)	. 184	2.971		7.766	A.470	(6)	· 6 . 481	(j)	k8.717
46	5. 808	. 239	. 609	. 551	e 5. 060	12. 267	2. 135	.071	. 622	. 163	15. 258
47	8.759		. 408	4. 285	e 1. 428	11.880	1, 738	. 443	. 498	.049	14. 607
48	6, 808	. 664	l . 401	3.895	. 391	12, 159	1.464	.105	. 268	' (o)	k 13, 996

n Including manganese.

Taxes not paid by lessee of furnace.

a Cyster should be cost of wood entering into the charcoal. The labor cost of converting the wood into charcoal is inseparably combined with furnace labor.

s The labor cost of converting wood into charcoal is inseparably combined with furnace labor. d Charcoal.

d Charcoal.

a Anthracite coal.

The expenditures for taxes are inseparably combined with those for supplies and repairs. The cost of repairs for this establishment was unusually high during the period covered by this investigation. The cost of repairs for content for supplies and repairs.

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repairs.
m Including insurance.

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59	6, 239		. 256	3. 057	!	12, 112 11, 917	1.647	.107	. 963	. 024	13. u07 14. 858 14. 291
90		. 347	. 40A	5 197		7, 173	1 816	.053 .056 .196	. 660 . 553 . 175	. 634	9.634
41 V:	1 501	.565 .573 .593 .153 .153	.477	4.560	1	7. 173 7. 202 9. 334 H. 505 8. 110 7. 554	2.608	. 196	. 175	.0-6	10, 267 11, 741
D.C	2. 16 3 3. 313		. 528 365 . 646	5. 491	j	9. 334	1.5+2 1.964	. 530 . 173 . 456	. 273	.022	11.310
41	3 340 2 6 63	101	. G16	4. 701		8. 110	1 641	. 456	1.449	. w3 . 031	11.310 11.779
W.)	357	. 000	. 397	4. 471	!	7. 554	1.835	178	. 283	. 031	9. 881 10. 867
WI	4.021	. 101	. 315 . 752	5, 068 5, 784	61,342 64,275	8. 40 4 10. 747	1. 835 1. 873 1. 607 1. 912	. 145 . 153 . 061	. 413 . 090 . 232 . 703	.032	12.813
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131	1 1144	. 010	. 391 . 229 . 560 . 714	5, U.33 4, 382		F. 811	1. 218	. 209	. 405	.039	10, 322
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104	جاخيا م		. 714	3.256	.237	7. 929 8. 340	1. 419	. 224	. 216 . 144	.031	9. 829 9. 933
104	2 04a	أنقنا	. 235 . 520	4. 263		8, 656	1, 251	. 113	. 118	.022	9. 933 10. 160
44	4 141	. 134	. 419	4.931		9, 575 8, 855	1.370 .784	. 103	. 986 . 290	. 037	12, 071 10. 025
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I.—COST OF PRODUCTION OF **PIG IRON** AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

H.-ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 49, 45 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britian.—Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Es-			Mate	rials.							
lish- ment num- ber.	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Total.	Labor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Total of all cost.
110 111 112 113 114 115 116 117 118	\$3.417 4.215 4.694 5.066 4.093 4.595 b2.680 c5.441 1.771	\$2.017 (b) (c)	\$0.483 .961 .704 .758 .771 .386 .535 c.854	\$4. 264 5. 397 3. 916 8. 986 4. 498 2. 880 5. 281 d.2. 766 5. 556	\$0,007 .033 (d)	\$8. 164 10. 578 8. 414 9. 810 9. 862 9. 885 9. 529 9. 061 7. 327	\$0.595 1.484 1.389 1.008 1.311 1.414 .769 .711	\$0. 170 .172 .150 .258 .435 .244 .067 (a)	\$0.593 .614 .501 .499 .675 .488 .496 £1.235	.042	\$9. 623 12. 913 10. 482 11. 592 11. 825 612.070 10. 893 f11. 107 8. 765

e From this amount should be deducted \$1.042, the value of lead, sine, and other incidental products per ton of iron produced, leaving the total net cost \$11.078.

b The expenditures for cinder, scrap, etc., are inseparably combined with those for ore. e The expenditures for coil are inseparably combined with those for ore and limestone. d The expenditures for coal are inseparably combined with those for coke. e The expenditures for officials and cierks and taxes are inseparably combined with those for supplies and repairs.

From this amount should be deducted \$0.619, the value of lead and sinc per ton of iron produced, leaving the total net cost \$10.488.

56 TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS E LISHMENTS IN VARIOUS STATES—Continued.

J.—PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUND

[Establishments numbers 1 to 7, 9 to 22, 41, 42, 46 to 50, and 65 to 90 are in the northern district of the United States: numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 25, 60, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.—This table is based on the preceding table, and to avoid duplicating the notes, which would be the same in substance, they are here emitted, and the reader referred to that table for such information as they furnish.]

			Mate	erials.							100
h- nt m-	Ore.	Cinder, scrap, etc.	Lime- stone.	Coke.	Coal.	Total	Labor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Total of all cost
1	44.56		. 43		31.54	76.53	15. 49	3.29	4.32	.37	10
2	26, 36		1.14		59. 48	86.98	7.85	1.72	3.16	. 29	10
3	47.95		1.05		36.43	85. 43	8.56	1.82	3.46	. 73	10
5	36.08 27.84		1. 12	*******	32.12 47.93	69.32 77.28	21.05	2.84	3.88	. 61	10
6	33, 81		1.31		45 90	81, 02	11. 61	3, 49	7.10	2.49	10
7	40. 38		9.53			90.05	6.49	2.05	. 90	.51	10
a l	19. 27		2.29		53, 91	75.47	14.21	5.14	4.84	.34	10
9	53, 56	2. 21	2.92	30. 58		89. 27	8.48	. 90	1.11	.24	10
0	50, 98	. 43	2.84	31.92	3.09	86.16	9,39	1.44	2.29	.72	10
1	59.09	1.22	1.95	2L 18			10.88	. 86	1.66	. 07	10
2	6L.87	5. 13	2. 37	18.90	********	88, 27		. 39	2.97	.59	10
3	63, 03	. 96	2,88 2,55	22. 71 22. 71		89, 58	P. 10	. 69	1.20	.43	10
5	57. 83	2.16	4.01	21. 62	.55	87. 69 86. 17	7. 68 9. 59	1.18	3.32	.15	
0	61.59	.34	2.26	23.49	. 33	87 63	9.42	.87	1.64		10
7	62. 97		2.25	20, 80	.56	87.63 86.58		1,78	3.09	.11	1 10
8	57. 47	1.97	4.01 2.26 2.25 3.73 2.72	20, 91		84.08 84.84	8.44 9.77	1.13	1.09 4.72	.30	10
9	61.79	1.97	2, 72	18.86	1.02	84.84	10, 52	1.64	2.63	.37	10
0	60, 69	*******	3. 31	11.79	11. 62	87.41 87.19	8,42	.61	2.63 3.37	. 19	10
1	71.20	*******	2.96	13. 03	10.70	87.19	7.96 7.65	T 64	3.53 2.06	, 28	10
2	61. 23 64. 83		3, 33	13. 30	20.70	88, 56	7.65	. 56	2.06	. 17	10
3	64. 32		1.81	21.46	2.43 1.11 1.70 1.90 .16	86, 82	10. 15 8. 31	1.36	1.55	.17 .12 .15 .14 .12	10
5	60, 42		1.76	20, 43	1.70	84 31	10.34	1.04	4 17	.13	10
8	61.55		1.71	21, 18	1.90	PG 34	9.53	.84	3.17	.12	16
7	56. 19	7.021.021.0	2.26	24. 45	.16	83, 06	9.53	1.94	5, 61	.09	10
7	63, 23	1.88	4.01	17.03	******	84, 40	6.98	. 29	8, 33		. 10
9	53, 66	1.88	3, 88	22, 95	********	24.30		1.13	5, 75	.14	10
0	61.24	. 57	3. 24	22,01	********	87.06		. 56	2.80	- 63	10
I	58, 76	. 58	3. 46	24. 20		87.00	9, 15	. 58	2.86 5.81	.41	10
2	52. 56	2.27	2.10	22, 08	.26	81.08 91.97	12, 21	-71	5.81	.21	10
3	60, 63		2 37	28. 04 28. 35	********	91, 35	4. 02 3. 95	******	4.01		10
3	65, 18		1.97	23, 87			6.79	.11			10
6	59. 65	1.45	1.66	26, 94				. 23	4.12	.11	10
7	56, 98	1.45 2.16 5.22	1.66	27, 28				. 15	5.71	.12	10
8	56, 51	5. 22	1.92	23. 11	0.020.000.000	86, 76	6.92	1.34	4, 83	. 15	10
9	62.25		2, 58	24.94	, 29	90.16 94.32	6.93	. 53	2.07	.31	10
a	55.74		3, 77	34, 81	16, 12	24. 52	4. 11	. 39	. 33	. 19	10
1	32, 68		3, 33	27, 62	16, 12	79.74	14. 65	3, 29	2. 15	- 17	10
2	27, 08		3. 80	36.77	11, 25		14. 59	1.75		.17	10
3	46, 92		2.38 2.28	38, 40		87. 70 88. 32			5,94		10
5	52, 90		2 11	34.08		89.09	5.39		5. 52		1 1
6	38.07	1,57	9 00	3.61	33 16	80.40	13. 99	. 46	4.08	1, 07	10
7	39. 43		2.79 2.87	29.33	9.78 2.79 4.63	81. 33	22 04	3, 03	3, 61	. 33	10
8	48. 64	4 74 3 23 2 65 4 47	2.87	27, 83 27, 57	2,79	86, 87 83, 43	10.46	1.11	1.92		10
9	43, 69	3.23		27. 57	4,13	83, 45	12.61	1.11	2.61	. 22	10
0	44. 49	2.55	3, 49	36, 55	*******	87.18	10.13	1.08	1.32	.29	10
1	42.33	7, 60	2.92	36. 65		86.37	7.53	. 79	1. 29 5. 34	- 41	10
3	43, 90	12.78	4.58 3.28	25, 32	********	86.95	10.46	.39	2.34	. 23	10
4	52, 12	13.78	2.88	7,99	19, 22	86.78	7.67	1.62	2.31	.10	10
5	56, 32		5, 27	21.05		82.64	11.31	1.16	3.80 4.57 3.57	. 32	10
4	51, 65	2.84	4.11	25, 12		83, 88	9.04	3.23	3.57	. 26	10
7	64, 74		5, 90	15, 99	******	86. 63	9,04	. 43	3.64	215	10
8	39.50	19, 53	6.30	15.19	2.21	80.72	12.03	1.55	6.74	. 43	10
9	33, 79	10.88	3.65	26, 40	2. 21	76.93	15, 25	. 90	6.74	. 10	10
10	36.43 68.12	9, 22 3, 97	2.36	44, 96	.50	91, 85 84, 07	4,68	. 73	2.50	. 24	10
al.	40.13	2,07	4.71	29, 62	. 37	87, 68	8.05	.19	7.53	.16	10
il.		Links	5.17	37, 97	.38	87, 17	9,04	. 69	2.70	.40	10
4		1. 99	5.05 2.97	81.60		84, 95		2.35	3.95	1.10	10
		8, 20	4000		28, 75	84, 24		3, 34	2.43	.53	10



TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

J .- PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS-Concluded.

[Ratablishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 3, and 91 to 114 are in the southern district of the United States; numbers 33 to 34, 42, 45 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 33 to 39, 61 to 63, and 116 are in Great Britain.—This table is based on the preceding table, and to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader referred to that table for such information as they furnish.]

Es-			Mate	rials.			1		e	ĺ	
lish- ment num- ber.	Ore.	Cimiler, scrap, etc.	Lime- stone.	Coke.	Coal.	Total.	Labor.	Officials and clerks.	Sup- plies and repairs.	Taxos.	Total of all cost.
67	50.40	7. 58	3.41	25. 44		86.83	9. 58	1.00	2.26	. 33	100
68	55. 06	1.36	1.90	26. 35	1.01	85. 68	10. 95	. 75	2. 32	·····	100
60 70	46. 76 49. 99	3.24	2.76 2.00	31.54 30.18	.72	84. 30 82. 89	10. 87 11. 04	1.42 1.78	3. 37 8. 73	.04	100 100
71	54. 87		3. 15	24. 25		82, 27	10.02	.64	6. 94	13	100
71 73 78	54. 36	10.71	6, 28	15.98		87. 33	9.43	1. 25	1.78	.21	100
73	47. 78	3.43	6. 19	10.78	19. 61	87.79	9. 69	1.66	. 67	. 19	100
74 75	48. 12 46. 04	9, 29	4. 22 8. 51	14, 02 27, 36	17.79	84. 15 86, 20	8. 35 11. 29	8. 04 . 62	4.03	.48	100
76	46. 24	8.11	3. 31 3. 11	26.03		83. 49	11. 30	1. 28	1.70 3,78	. 19	100 100
77	47. 49	9.18	2.72	24. 59	2.60	86. 58	9. 17	1.56	2,40	. 29	100
78	31. 31	11.45	3. 36	7. 13	26, 51	79. 76	11.57	2, 59	5, 84	24	100
79	42. 45	4. 23	5.90	18. 95	10.41	81.94	9.79	1.52	6. 54	. 21	100
80 81	46. 88 45. 06	9. 74	5. 09 8. 6 2	32. 36 17. 23		84. 33 80. 65	11. 16 12. 81	1. 17 3. 83	3.03	.81	100
82	36. 61	12.34	9 83	17. 09		75.87	17.89	3.01	2. 88 2. 57	.66	100 100
83	47.31	10.42	7. 10	14.64		79. 47	14.67	1.44	2.67	.75	100
83 84 85	42.09	4, 89	5. 97	20.60	9. 57	83, 12	10. 32	1.75	4. 57	. 24	100
85	85, 88	4.19	8. 96	1.18	81.27	81. 48		2.64	2. 35	. 86	100
86 87	49. 00 53. 73	6.14	3. 11 3. 80	23.50 24.71		81. 75 86. 26	13. 85 9. 27	.71	3. 44 8. 82	.25	100
88	44. 51	1 23	4. 88	29. 40		80.04	14. 35	1.52	8.94	.15	10 0
80	59 . 02	l. 	1. 72	20.78		81. 52	11.08	.72	6. 52	.16	100
90	43. 80	2.43	2. 35	84. 81		83. 39	10.93	. 87	4. 62	69	100
91	16. 20	.07	4. 24	53. 95		74. 46	18. 85	. 58	5. 76	. 85	100
93	21. 09 28. 23	······	4. 65 4. 50	44. 41 46. 77		70. 15 79. 50	25. 40 13. 47	1.91 4.51	1. 70 2. 33	. 84 . 19	100 100
- R	29. 53		8. 23	40. 67		73. 43	17.37	1. 53	7. 40	.27	100
94 93	22 60	. 86	5. 48	89. 91		68. 85	13.93	8, 87	12, 64	.7i	100
96	26. 18	1.00	4.02	45. 25		76, 45	18. 57	1. 80	2, 87	. 81	100
97	27. 80		2. 90	46.64		77. 34	17. 24	1. 83	8. 80	. 29	100
98 99	82 . 87 28. 45		5. 87 3. 10	45. 14 44. 88	•••••	83. 88 76. 43	14, 10 20, 25	1. 19 . 65	.70 2.46	.13	100 100
100	21. 40		2.54	46. 32		71. 26	18.56	1.70	7. 67	:41	100
101	18.69	. 09	8. 69	47.44		69. 91	19.68	1.97	8. 28	.16	100
102	39. 42	1. 18	2. 12	40, 49		82 03	11.25	2.62	8.74	. 36	100
103 304	82. 68 40. 29	L. 18	5. 02 7. 26	44. 78 33. 13		83, 66 80,67	12. 19 14. 33	1. 17 2. 28	2.76 2.20	. 22	100
105	39. 75		2, 36	38.96	2. 89	83. 96	12.33	.90	1.45	.53	100 100
106	86. 80	1. 32	5. 12	41.96		85. 20	12.81	ı.ii	1. 16	. 23	100
107	34. 39		4.08	40.85		79. 32	11. 35	. 85	8, 17	. 31	100
108	49. 65		6. 53	38. 68		88. 33	7. 82	.49	2. 89	.47	100
109 110	39. 79 35. 51	•••••	6. 53 5. 02	82. 42 44. 31	• • • • • • • • • • • • • • • • • • • •	78, 74 84, 81	11.90 6.18	1.25 1.77	7.98 6.16	. 18 1. 05	100
iii	32, 64		7.44	41.80		81. 88	11. 49	1.33	4.76	.54	100 100
112	44. 78		6.72	28.77		80, 27	13. 25	1.43	4.78	:27	100
113	43.70		6.54	34. 39		84. 63	8.69	2.23	4.30	. 15	100
114	84. 61	<u>;;</u> <u>:</u>	6. 52	38.04	<u></u> -	79. 17	11.09	8.68	5. 71	. 35	100
115	38 . 07 33 . 78	16.71	8. 20 4. 01	23. 86 48. 48	.06	81. 90 87. 47	11. 72 7. 06	2.02 .62	4.04	.32	100 100
116	48.99		7. 69	24. 90		81. 58	6.40		12.02		100
118	20. 21			63. 39		83, 60	8.61	2. 52	4. 09	L 18	100

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

K.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 56, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

		∆dditi	onal cost.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
1	\$300	\$1,400	\$1,500	\$3, 20
2	2, 164 775	773	284	8, 22 77
3	775			77
4	265			86
5	300		570	87 1, 30 57
6	850		950	1, 30
·····	100 850	475 1, 001		1, 85
9	830 517	5 498		5, 97
n	547 1, 000	5, 428 18, 000	15, 289	34, 28
1	2,000	1		
3				
8			2, 227	2, 22 50
4	500			50
5				
5	1, 200	a 18, 500	30, 000	31, 20
······································	875	a 18, 500		18, 87
D	· • • • • • • • • • • • • • • • • • • •		19, 087	19,08
,	400		19,061	19,06
1	•	4, 500	4,000	8, 50
2	200	1,000		20
	819	4, 200		4,51
4	350	1. 954		2,36
5	474	b 13, 566		14, 04
<u> </u>	474	b 15, 737		16, 21
	906			90
·	(c)	(c)	17, 520	d 17, 52
	• • • • • • • • • • • • • • • • • • • •			
······	198			19
2	190			l
4	(c)	(e) _	(e)	(e) -
5				
9				
]	· • • • • • • • • • • • • • • • • • • •	· • • • • • • • • • • • • • • • • • • •		
		·······		14, 63
D	. 89 5	14, 547	78	14, 03
/	500	6 229	2,074	8,79
2	382	6, 22 2 18, 321	11, 756	30, 4
3	(e)	(e)	(e)	(e) T
	(e)	(c)	(c)	(6)
S	(e) (e)	(e)	(e)	(c) (c)
	· • • • • • • • • • • • • • • • • • • •			
	137	5, 963		6, 10
	(0)	b 5, 500		15,50
	113 953	9, 452		10, 40
**************************************	1, 200	g 18, 640		19,84
	120	y 10, 025	2, 625	18,00
	525 250 325 485		1	1 89
	250	9, 000		9, 2
	325	6,000	3, 000	9, 25 9, 31 7, 59
	485	7, 167		7,59
	(ø)	40	65	d 10
		4, 500	4,000	8,50
······································	203 103	4,002		410
	103	2,002		,
	31	5, 056	l	5, 06
	ii	1, 845	1	1 1,8

a Of this amount \$15,000 is rental of furnace. & Rental of furnace.

Not reported.

Tet including insurance and interest.

⁴ Insurance not paid by lessee of furnace.

f Not including insurance.
g Of this amount \$12,434 is rents!

TABLE 1.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTAB-LISHMENTS IN VARIOUS STATES—Continued.

K .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 62 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

;	Additional cost.							
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.				
4	\$6		\$57	\$63				
<u>15</u>	120 369			120				
7	- 809	\$10, 293		10, 663				
19	(a)	b 2, 808		ø 2, 80l				
<u></u>			-					
70	250 566	• • • • • • • • • • • • • • • • • • • •		236 566				
79								
13	113	d 7, 413		7, 52				
74	200 250	13, 095		13, 29, 25				
/9 78	250 507	2, 904		250 8, 41				
77	496	2, 304		49				
78	10 25			1				
79	25	625		63				
N	8 322	(e)		/32				
19	250	(4)		725				
B		(e)		(6)				
84	33	(e) 2, 500		2, 53				
B	85 265	3, 260		8. 5 2				
7	67	0, 200		5, 52				
88		11, 500	20,000	31, 50				
89	240	11, 997		12, 23				
90		• • • • • • • • • • • • • • • • • • • •		•••••				
72		8, 759	13, 139	21, 89				
13								
4	450	29, 000	8, 789	38, 23 7, 20				
95	• • • • • • • • • • • • • • • • • • • •	7, 200 11, 000	1, 000	7, 20 12, 00				
7	75	233	1,000	30				
18								
9								
00	275 454			27 43				
72	ĭi	759		77				
ß	11 83	2,000		2, 08 11				
<u>x</u>	25	90		11				
95	10	167		17				
77		(e) 10.	(e)	(e) 1·				
8	2, 445	(e) 2, 700		5, 14				
9				· • • • • • • • • • • • • • • • • • • •				
10	• • • • • • • • • • • • • • • • • • • •			• • • • • • • • • • • • • • • • • • • •				
2			19, 974	19, 97				
3								
14	· • • • • • • • • • • • • • • • • • • •	(e)	[(6)				
l5	54		19, 846	19, 84				
17			(6)	(e) J				
\								

Insurance not paid by lessee of furnace.
 Rental of furnace.
 Not including insurance.

<sup>d Of this amount \$3,681 is rental of furnace.
s Not reported.
f Not including interest.</sup>

TABLE I.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

L.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 7,9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

		Additional	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
	\$0.104	\$0.484	\$0.519	\$1.1
	. 087	. 031	.011	7.,
	.066			
	.064			
	. 100		. 190	1 3
	.140		.380	
	083	.300		
	.059	.070		
	. 029	. 292		
	.019	, 350	. 297	
			.000	
	.006			
	. 016		. 412	
***************************************	.012	a.617		
			. 750	
	.009	***********	**********	
	**********	. 210	. 186	
	.009			
	.011	.138	***********	
***************************************	.014	.081		
	.017	b.500		
***************************************	.015	b.500		
***************************************	. 022			
	(c)	(c)	. 400	d.
			************	**********
	************		***********	
	.010	************		
		************	***********	
***************************************	************	***********		
	(c)	(c)	(c)	(0)
******************************	**********	*******		

	.001	.231	*******	
	.005	. 231	. 073	
***************************************	.060	,750	. 250	1.
***************************************	.013	. 623	.400	i.
***************************************		(c) . 023	(e) .400	
***************************************	(0)	(c)		(c)
********************************	(c) (c)	(e)	(c) (c)	(c) (c)
***************************************	(6)	107	(0)	(0)
	.012	. 520		
	(e)	b. 232		1.
	. 006			1 1
	.029	.292 4.750		
	. 048	a.750		
***************************************	.008		. 050	
	, 009			1 2
	.011	, 392		1 3
	.015	.272	.136	1 3
***************************************	. 034	. 500		1 2
***************************************	(c)	, 205	, 333	,
		. 401	, 356	
***************************************	.013			1
***************************************	.002	. 059	************	

***************************************	.002	. 231		
***************************************	.001	. 231		
	. 005	TE	.045	

d Not including insurance and interest.

Insurance not paid by lesses of furnace

Not including insurance.

TABLE 1.—COST OF PRODUCTION OF PIG IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

L.-ADDITIONAL COST OF CERTAIN THEORETICAL RIEMENTS IN ONE TON OF 2,240 POUNDS-Concluded.

[Establishments numbers 1 to 7, 9 to 32, 41, 42, 46 to 59, and 65 to 90 are in the northern district of the United States; numbers 8, and 91 to 114 are in the southern district of the United States; numbers 33 to 35, 40, 43 to 45, 60, 64, 115, 117, and 118 are on the continent of Europe; and numbers 36 to 39, 61 to 63, and 116 are in Great Britain.]

		Additional	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total
6	\$0.014 .009	\$0, 258		\$0. 014
7		40. 200		. 20
8	(6)	b . 250		ø. 25
70	.016			.010
71	.010			.010
2				
7	.008	d.503		. 51
74	.006	. 400		. 40
<u> </u>	.007		••••••	. 00'
76	.016 .019	. 089		. 10
71	.019			. 019
fg	.013	. 385		. 010
M	. 003			.00
1	.018	(6)		₹.01
2	. 107	(6)		1.10
B		(e)		(ø) ⁻
H	. 006	```. 425		. 43
5	. 061			.06
9	.015	1.184		. 19
17	. 007	. 471	\$0, 820	. 00
50	.007	.822	\$0.820	1. 29 . 32
M	.001	.022		. 34
n				
2		. 230	. 375	, 62
B				
H	. 013	. 825	. 250	1.08
6		. 373		. 37
M		. 468	. 043	. 51
77	.007	. 023		. 03
16				••••••
10	. 004			. 00
11	.010			.01
2	.004	. 274		. 27
13	. 002	. 058		.06
4	. 013	. 047		. 06
05				
M	. 003	. 049		. 05
97	.040	(6)	(#)	(6)
M	. 010	.014		. 08
M	· · · · · · · · · · · · · · · · · · ·			•••••
11				
12			.500	. 50
13				•••••
14		(6)		(4)
15			. 589	. 58
16	. 004		[<u></u> -]	.00
17			. 483	. 48
18	. 005		.047	. 03

s Insurance not paid by lessee of furnace.
b Rental of furnace.
o Not including insurance.

d Of this amount \$0.250 is rental of furnace.

Not reported.f Not including interest.

From the foregoing table have been drawn certain minor tables showing various features for the twenty-six blast furnaces of the northern district of the United States, and the twenty-four of the southern district making run of furnace pig iron, by which the relative condition and results can be intelligently studied. These minor tables are as follows:

BUN OF FURNACE PIG IRON IN THE UNITED STATES.

DESCRIPTION OF FURNACES AND QUARTITY OF PRODUCT.

1	Northern di	strict.		Southern district.						
Descript	ion of furna	ce.	Tons (2 240 lbs.)	Descript	ce.	Tons (2,240 lbs.)				
Establishment number.	Diameter of bosh (inches).	Height of stack (feet).	produced per day per fur- nace.	Establishment number.	Diameter of bosh (inches).	Height of stack (foet).	produced per day per fur- nace.			
133	144 192 192 185 193 174 192 222 186 198 168 156 156 152 204 198 150 144 162 138 168 168	52 73 75 72 76 57 77 29 60 63 63 60 65 63 60 60 63 60 60 60 60 60 60 60 60 60 60 60 60 60	34 118 107 122 106 44 156 100 42 89 94 91 84 91 84 92 45 45 62 25 27 49 15 80 74	91	204 (a) 102 216 164 210 192 192 240 (d) 204 192 156 (f) 192 216 240 192 216 240 224 128	(a) 75 75 75 75 75 75 80 (a) 75 65 65 65 65 70 70 70 80 60 61 75 80 80 80 80	-69 661 85 102 52 81 98 87 103 68 64 647 113 100 84 105 642 87 119			

a One 198 and one 213 inches.

SUMMARY OF DESCRIPTION OF FURNACES AND QUARTITY OF PRODUCT.

Items.	Northern district	Southern district.
Establishments reporting the facts required for statements below	29	24 35
Average height of stack (feet). Average production per day per furnace (tons of 2,240 pounds)	64.7	1987 701 771

The general results as to measurement discoverable in the preceding table are that for the twenty-six northern establishments the average diameter of bosh is 179.1 inches and the average height of stack 64.1 feet; and for the twenty-four southern that the average diameter of bosh is 198.7 inches and the average height of stack 70.6 feet. In spite, however, of the larger cubical contents of southern furnaces the average

y product per furnace for the northern district was 86.6 tons, and a southern district 77.8 tons. If we now examine the next table I get some notion of the cause of this.

O Une 53 and one 75 feet.
6 Average product per day of two furnaces of different sizes.

d One 192 and one 204 inches.

⁶ One 65 and one 70 feet.

f One 168 and one 180 inches.

G One 183 and one 168 inches.

PART L-COST OF PRODUCTION.

RUN OF FURNACE PIG IRON IN THE UNITED STATES.

QUANTITY OF IRON IN ORE, AND TONS OF ORE, ETC., TO ONE TON OF PRODUCT.

[The ton considered is of 2,240 pounds.]

	Northern d	istrict.			Southern die	trict.	
Establishment number.	Per cent. (average) of me- tallic iron in ore used.	Tons of ore to one ton of prod- uot.	Tons of cinder, scrap, etc., to one ton of prod- uct.	Establishment number.	Per cent. (average) of me- tallic iron in ore used.	Tons of ore to one ton of prod- uct.	Tons of cinder, scrap, eto., to one ton of prod- uct.
65	59. 8 55. 8 65. 4	1. 530 1. 686 1. 336	. 834	91 92 93	(b) 43. 8 49. 6	2, 414 2, 358 2, 300	. 010
68 69 70	60. 0 59. 3 52. 0	1. 642 1. 624 1. 92 2.	. 061 . 148	94 95 96	46.8 47.2 47.4	2. 128 2. 006 2. 167	. 100
71 72 73	62. 0 56. 5 52. 3 (a)	1. 669 1. 294 1. 723 1. 859	. 478 . 253	97	53. 0 47. 5 48. 9 44. 4	2. 110 2. 305 2. 521 2. 264	
75 76 77	61. 7 61. 1 62. 6	1.212 1.237 1.278	.466 .388 .446	101 102 103	46. 0 39. 5 47. 4	2. 290 2. 723 1. 979	. 014
78 79 80	51. 1 (a) (a) 45. 8	1. 082 1. 896 2. 580 1. 509	. 891 . 309	104	49. 6 38. 8 46. 1 50. 2	1.966 2.508 1.812 1.973	.111
82 83 84	(a) 54. 4 (a)	1. 683 1. 356 1. 881	. 521 . 514 . 309	108 109 110	38. 8 52. 5 48. 1	2. 952 2. 530 2. 096	
85 86 87 88	(a) 60. 0 50. 5	2. 870 1. 643 1. 546 2. 239	. 287 . 257 . 182 . 093	111	42.5 44.0 42.0 47.0	2. 379 2. 328 2. 252 2. 193	
89 90	59.7 60.0	1. 675 1. 496	. 194				

a Not reported.

b From 35.5 to 47.8.

SUMMARY OF QUANTITY OF IRON IN ORE, AND TONS OF ORE, ETC., TO ONE TON OF PRODUCT.

Items.	Northern district.	Southern district.
Establishments reporting both per cent. of iron in ore and the tons of ore used Per cent. of iron in an average ton of ore in these establishments. Establishments using ore only. Tons of ore used in these establishments. Tons of product in these establishments. Average tons of ore to 1 ton of product in these establishments. Establishments using both ore and cinder, scrap, etc Tons of cinder, scrap, etc., used in these establishments. Tons of cinder, scrap, etc., used in these establishments. Average tons of ore to 1 ton of product in these establishments. Average tons of cinder, scrap, etc., to 1 ton of product in these establishments.	58. 9 6 822, 609 185, 099 1. 743 20 538, 127 119, 225 359, 278 1. 498	23 45, 5 18 1, 118, 838 481, 215 2, 325 6 365, 472 9, 713 166, 513 2, 195 . 058

It is generally the case that a mix of several kinds of ores is used varying somewhat in the proportions of certain important constituents. The per cent. of metallic iron, therefore, shown in the preceding table is generally an average based on the several different per cents., taking into account the quantities of each ore used. It will be seen at a glance that the proportion of iron in the ore is much smaller in the southern than in the northern district, the actual average for the 19 northern establishments, for which figures are given, being 58.9 per cent., and for the 23 southern, 45.5 per cent. Naturally, then, a larger quantity of ore must be

used in the south. Reference to the table shows that for establishments depending on ore alone the 6 northern used an average of 1.743 tons, and the 18 southern 2.325; and that for those using cinder, scrap, etc., as well as ore the average of ore was for the 20 northern 1,493 tons, and for the 6 southern 2.195 tons. It is apparent that the southern furnaces depend much more largely on ore alone, and for those that use cinder, scrap, etc., in addition the proportion is only 0.058 ton per ton of product against 0.332 ton in the north.

The following table shows the tons of each different material used to one ton of product:

RUN OF FURNACE PIG IRON IN THE UNITED STATES.

Tons of Material to One Tox of Product.
[The ton considered is of 2,240 pounds.]

		Nort	he rn di	stric t .			l		Sout	bern di	strict.		
Es- tab- lish- ment num- ber.	Ore.	Cin- der, scrap, etc.	Lime- atone.	Coke.	Coal.	Total.	Es- tab- lish- ment num- ber.	Ore.	Cin- der, scrap, etc.	Lime- stone.	Coke.	Coal.	Total.
80 81 82 83 84 85 86 87	1. 530 1. 686 1. 336 1. 642 1. 624 1. 922 1. 689 1. 294 1. 723 1. 821 1. 237 1. 237 1. 237 1. 256 1. 886 2. 1. 683 1. 569 1. 569	.834 .386 .061 .148 .478 .253 .466 .388 .446 .891 .509 .521 .514 .899 .287 .287 .287 .287 .287	.744 .400 .461 .347 .546 .336 .470 .967 .553 .912 .573 .915 .958 2.053 1.004 .1.569 1.222 .941 .941 .941 .941 .941 .941 .941 .941	1. 197 1. 117 1. 250 1. 348 1. 329 1. 373 . 361 1. 268 1. 178 1. 118 . 256 . 823 1. 489 1. 834 1. 659 . 806 . 046 1. 103 1. 183 1. 183	2. 718 .011 .098 .056 a. 043 a. 708 .209 al. 267 a. 533 a. 465 al. 401	5. 426 3. 294 3. 290 3. 368 3. 643 3. 643 4. 132 4. 250 3. 812 3. 624 4. 409 6. 122 4. 519 6. 122 4. 500 6. 045 3. 508 5.	91 92 93 95 96 97 101 102 103 104 105 106 109 111 111 111	2. 414 2. 358 2. 300 2. 128 2. 167 2. 1167 2. 305 2. 521 2. 240 2. 722 1. 973 2. 952 2. 952 2. 379 2. 328 2. 252 2. 379 2. 328 2. 252 2. 192	.010	. 450- . 733 . 788 . 604 . 925 . 764 . 376 . 835 . 450 . 586 . 580 . 741 . 965 . 438 . 777 . 657 . 1. 125 . 791 1. 200 1. 005 1. 005 1. 001	1. 828 1. 563 1. 257 1. 150 1. 793 1. 331 1. 358 1. 476 1. 513 1. 649 1. 774 1. 551 1. 120 1. 551 1. 120 1. 553 1. 421 1. 330 1. 421 1. 121 1. 122 1. 423	. 183	4. 702 4. 654 4. 345 3. 882 4. 824 4. 352 3. 4. 616 4. 483 4. 676 5. 143 4. 105 4. 485 4. 765 3. 820 4. 985 5. 926 5. 926 6. 926

s Anthracite coal.

SUMMARY OF TONS OF MATERIAL TO ONE TON OF PRODUCT. [The ton considered is of 2,240 pounds.]

Items.	Northern district.	Southern district.
Establishments reporting the facts required for statements below Tons of ore used in these establishments Tons of limestone used in these establishments Tons of limestone used in these establishments Tons of coke used in these establishments Tons of call used in these establishments Tons of all material used in these establishments Tons of product in these establishments Average tons of ore to 1 ton of product in these establishments Average tons of cinder, scrap, etc., to 1 ton of product in these establishments Average tons of limestone to 1 ton of product in these establishments Average tons of coke to 1 ton of product in these establishments Average tons of cola to 1 ton of product in these establishments Average tons of all materials to 1 ton of product in these establishments	26 860, 736 119, 225 842, 361 74, 935 1, 998, 011 544, 377 1, 581 219 629 1, 103 138	1, 484, 31(9, 71; 433, 64; 936, 96; 51; 2, 665, 142; 647, 72; 01; . 665 1, 444 . 00;

By the above we see that the average quantity of ore used to one ton of product in the northern district is 1.581 tons, of cinder, scrap, etc., 0.219 tons, of limestone 0.629 tons, of coke 1.103 tons, of coal 0.138 tons, and of all materials 3.67 tons; in the southern district it is for the 21 establishments, of ore 2.292 tons, of cinder, scrap, etc., 0.015 tons, of limestone 0.669 tons, of coke 1.446 tons, of coal 0.001 tons, and of all material 4.423 tons. The north uses more cinder, scrap, etc., and more coal; as a fact only 1 of the southern establishments to 11 of the northern use coal, but the south uses more ore, more limestone, and more coke. There are several facts that need to be kept in mind in order to account in a reasonable way for the great differences in the quantities of materials used. For one, the richness of the ore used in metallic iron. This will largely affect not only the quantity of ore necessary for the production of a ton of iron, but by consequence the amount of fuel necessary to smelt it.

Again, the character of the ore used. Some ores are more difficult to smelt than others and require a larger quantity of fluxing materials (limestone). Finally, the composition of the auxiliary materials. There are quite wide differences in the richness and purity of the auxiliary materials—i. e., limestone and coal or coke—in different localities which would affect the quantities necessary for the production of a ton of iron independently of any difference in the quantity and quality of the ore. The cost of these various materials is considered in the next table.

RUN OF FURNACE PIG IRON IN THE UNITED STATES.

COST OF MATERIALS PER TON.

[The ton considered is of 2,240 pounds.]

Northern district.						:	Southern	district	.		
Estab- lishment number.	Ore.	Cin- der, scrap, etc.	Lime- stone.	Coke.	Conl.	Estab- lishmeut number.	Ore.	Cin- der, sorap, etc.	Lime.	Coke.	Coal.
85	\$3 , 645	\$1. 300	\$0.896		\$1.638	91	\$0.647	\$0. 685	\$0.906	\$2,843	
66	4. 464		. 662	\$2, 782	2. 406	0:2	. 918		. 651	2.916	
57	4. 993	2.601	1.000	3.015	l·•:•:l	93	1.441		. 670	4.308	
68	4.900	3. 250	. 800	3.080	1, 515	94	1.570		. 603	3.993	
9	4. 273	3. 250	. 750	3.471	l·••••	95	1.327	1.000	. 698	2.622	-
0	3, 459		. 790	3. 020	1.736	96	1. 194	1.098	. 520	3. 3(%)	
1	4. 500		. 900	3.640		97	1. 432		. 810	3.731	
3	5. 5:15	2.948	. 838	1,533	1. • • • • • • • • • • • • • • • • • • •	98	1. 827		, 9u 0	3, 920	
3	4. 298	2. 100	1. 130	4.379	a 2.914	99	1.065		. 650	2.100	
74	4. 000		. 900	4.700	a 3. 576	100	. 863		. 623	2.573	-
75	5. 243	2.750	. 672	2.979		101	. 866	. 750	. 653	2.834	-
· 6	4.615	2.594	. 814	2.746		102	1, 567		. 395	2.3-0	
7	5. 86 l	3. 250	. 750	3.472	1.940	103	1.840	1.072	.756		i
3	3.942	1.751	. 501	3. 796	a 2 849	101	2.014		. 737		
9	3, 267	2.000	. 900	3.359	a 2 850	105	1. 520		. 543	2.49	\$1.50
0	2. 638		. 360	3. 136		106	2.003	1.203	. 670	308	
31	4.044	2. 692	1.210	1.322		107	2, 104		. 750	3.360	
2	2.782	3. 029	. 800	1.064		108	1.686		. 	2.564	
ıT	4. 735	2.750	. 789	1.197	1	109	1. 950		. 720	3.024	
34	3. 137	2.213	.881	3. 222	a 2. 858	110	1. 630		. 6:0	4. 104	
35	1.709	2.000	. 850	3.540	a 3. U50	111	1. 772		. 743	3, 797	·
36	3, 876	2 101	. 800	2.770	l	112	2. 016		.700	2, 699	'.
37	5, 128	3. 250	. 896	3,080	l	113	2, 250		. 750	3. 262	
8	2.516	1. 743	. 400	8.080	1	114	1.867		, 830	3.074	
9	5. 234	. 	.793	2.827		1		1	i	i	ı
	4. 183	1.789	. 930	4.827	1	1		ı	I	l	1

& Anthracite coal.

H. Ex. 265-5

BUN OF FURNACE PIG IRON IN THE UNITED STATES Concluded. SUMMARY OF COST OF MATERIALS PER TON.

[The ton considered is of 2,240 pounds.]

Items.	Northern district.	Southern district.
Establishments reporting the facts required for statements below Cost of the ore used in these establishments Cost of the cinder, acrap, etc., used in these establishments Cost of the limestone used in these establishments. Cost of the coal used in these establishments. Average cost of one ton of this ore Average cost of one ton of this cinder, acrap, etc. Average cost of one ton of this limestone. Average cost of one ton of this cost. Average cost of one ton of this cost.	\$3, 787, 982 813, 679 273, 207 1, 810, 814 201, 940 4. 401 2. 631 .798 3, 014	24 \$2, 245, 830 10, 011 304, 142 2, 889, 676 800 1, 513 1, 031 701 3, 084 1, 566

The preceding table shows that in the northern district the ore used cost per ton on an average \$4.401, the cinder, scrap, etc., \$2.631, the limestone 79.8 cents, the coke \$3.014, the coal \$2.695; and in the southern district the ore \$1.513, the cinder, scrap, etc., \$1.031, the limestone 70.1 cents, the coke \$3.084, and the coal \$1.565. The difference in favor of the south in the cost of ore and of coal is very great, a difference as far as the ore is concerned which we have seen is partially offset by its comparatively lower per cent. of iron. The cost of these materials per ton of product is now considered.

BUN OF FURNACE PIG IRON IN THE UNITED STATES.

COST OF MATERIALS PER TON OF PRODUCT.

[The ton considered is of 2,240 pounds. In the northern district establishments numbered 66, 70, 71, 74, 80, and 89 use ore only; all others a mixture of ore, cinder, scrap, etc. In the southern district those numbered 91, 95, 96, 101, 103, and 106 use a mixture of ore, cinder, scrap, etc., and all others use ore only. In the northern district establishment number 65 uses coal only, those numbered 66, 68, 70, 73, 74, 77, 78, 79, 84, and 85 use a mixture of coke and coal, and all others use coke only. In the southern district establishment number 105 uses a mixture of coke and coal, and all others use coke only.]

	Northe	rn distric	t.			Southe	ern distric	t.	•
Establish- ment num- ber.	Ore and cinder, sorap, etc.	Lime- stone.	Coke and coal.	Total.	Establish- ment num- ber.	Ore and cinder, scrap, etc.	Lime- stone.	Coke and coal.	Total.
15	26, 661	\$0,667	83, 797	\$11, 125	91	\$1,568	80. 408	\$5, 197	87, 177
36	7. 525	. 265	3, 337	11. 147	92	2, 165	.477	4, 560	7, 20
7	7. 674	. 451	3. 367	11. 492	93	3. 315	. 528	5. 491	9. 334
38	8. 243	. 278	3, 998	12.519	94	3.340	. 363	4. 600	8. 304
59	7.417	. 410	4. 679	12.506	95	2.763	. 646	4. 701	8. 110
70	6.648	. 266	4. 110	11.024	96	2. 686	. 397	4.471	7. 55
/1	7. 510	. 431	3. 320	11. 261	97	3. 021	.315	5.068	8, 40
72	8, 570	. 827	2. 105	11. 502	98	4.211	.752	5. 784	10.74
73	7. 937	, 960	4.710	18. 607	99	2. 686	. 293	4. 237	7. 21
i 4	7. 435	. 652	4. 915	13.002	100	1.960	. 324	4. 243	6. 52
5	7. 637	. 484	3.776	11.897	101	1.903	. 391	5. 033	7. 41
<u> </u>	6. 752	. 386	8. 234	10.372	102	4. 266	. 229	4. 382	8. 87
7	8. 941	. 429	4, 290	13.660	103		. 560	4. 991	9, 32
<u> </u>	5. 824	. 457	4. 582	10. 863	104	3. 959	.714	3. 256	7. 92
79	6. 813	. 861	4. 284	11. 958	105	3.948	. 235	4. 157	8.34
90	6. 808	. 739	4. 700	12.247	106	3. 878	. 520	4. 263	8, 65
11	7. 715	1. 214	2. 425	11. 354	107	4. 151	. 493	4. 931	9. 57
3	6, 259 7, 833	1. 256	2. 185	9.700	108	4.977		8. 878	8, 85
		. 964 . 837	1. 986 4. 229	10. 783 11. 650	109	4. 935 3. 417	. 810	4. 021	9. 76
	6. 584		4. 436	11. 139	110	4.215	. 483	4. 264	8.16
	5. 478	1. 223	3.054	10. 624	111	4. 694	. 961	5. 397	10. 57
36 37	7. 166 -8. 518	. 561	3.641	12, 723	112	5.066	. 704	3, 016 3, 986	8, 41- 9, 81-
8	5. 953	. 635	3. 824	10. 412	114	4.003	. 771	4, 498	9. 81
39	8. 769	. 256	3. 087	12.112	114	7. (73		7.798	9. 56
0	6.606	336	4. 975	11.017		1 1			
	U. 0007		4. 515		l I				

RUN OF FURNACE PIG IRON IN THE UNITED STATES-Concinded.

SUMMARY OF COST OF MATERIALS PER TON OF PRODUCT.

[The ton considered is of 2,240 pounds.]

Items.	Northern district.	Southern district.
Establishments reporting the facts required for statements below. Cost of the ore, cinder, scrap, etc., used in these establishments. Cost of the limestone used in these establishments Cost of the coke and coal used in these establishments Cost of all materials used in these establishments. Tons of product in these establishments. Average cost of ore, cinder, scrap, etc., per ton of product in these establish-	\$4, 101, 661 \$273, 207 \$2, 012, 754	\$2, 255, 841 \$304, 142 \$2, 899, 476 \$5, 450, 459 647, 726 \$3, 482
ments. Average cost of limestone per ton of product in these establishments Average cost of coke and cosl per ton of product in these establishments Average cost of all materials per ton of product in these establishments		. 470 4. 462 8. 414

In this table, showing the cost of materials per ton of product, the costs of ore, cinder, scrap, etc., are combined, as they alike furnish the material from which the metal is obtained, and for a kindred reason the costs of coke and coal are united. The average cost per ton of product in the northern district is, for ore, cinder, scrap, etc., \$7.534, for limestone 50.2 cents, for coke and coal \$3.698, and for all materials \$11.734; in the southern district, for ore, cinder, scrap, etc., \$3.482, for limestone 47 cents, for coke and coal \$4.462, and for all materials \$8.414. As might have been expected from the preceding tables we find the cost of materials per ton of product generally lower in the south than in the north, the only articles higher being coke and coal. An earlier table which gives the tons of material used to one ton of product (page 64) shows that the combination coke and coal means coke simply in the southern establishments, as only one of them uses coal, and that the quantity of coke necessary to one ton of product is 1.446 tons in the south to 1.103 tons in the north. The table preceding the one under consideration shows the average cost per ton of coke in the south to be \$3.084, and in the north \$3.014, a very trifling difference, so that the real reason for the larger cost of coke and coal per ton of product in the south seems to be the larger quantity of coke necessary. Let us examine now the cost of labor and other items of expense per ton of product in the two sections.

THE RESIDENCE AND LABOUR.

		· · · · ·	41.1.15			BELIEFE LANDS.					
					1824	Taras materix minuse	Tacop.	Eccision and a second	THE COLUMN		Inn.
4	نت الم المند	1 44 74 74 74	2 	4 1 1+	1 . 12	! ! !	工组	# 5 .3 -3	100	* 64	E 471
1		=======================================	 		(*************************************	•	4.11.4		2	12 12 12 13 14	1 463
	÷.	41. 1	11. (14 14 V	- 	9 .0 	如此的我正一样(1) 期前	41 75 29 21	THE PART OF THE PARTY.	0.00	1 225 1 64 1 193
•	-	11	~± /+ +- +5			-3 5 7	1544		284 214 1	174 18. 19.	1. 621 1. 840 1. 593 1. 564
		200 200 300 300	: 4		1000年8月	.,	estending.		(6) (2) (2) (3) (4) (4) (5) (5)		1 (45) 1 (45) 1 (45) 1 (45) 2 (45) 2 (45) 2 (45) 2 (45) 2 (45)
÷		सीरणीयक्षात्राम् एक्ष्म्रीस्थान्।	丁學27 : 門屋建門衛衛	និញ្ញានិងស្រុះស្រុះ ស្រុកស្រុកស្រុកសម្រើនិស្សា និស្សា និស្សា និស្សា និស្សា និស្សា និស្សា និស្សា និស្សា និស្សា ន	HALL BEFORE THE	=======================================	9 9- 	بد ند ت	113 523		2.064 1.752 2.663
										:	

a Date for the or some of fermion.

2 In minding taxes.

Samples of Charles Lewis and Fee Top of Products

The use meant-red is of 2.224 provide.

2.436	Northern district.	Southern district.
The anticomplet reporting the fixes may alred for the statements below. I will be a fixed the series of these series at these series at these series. I will be a fixed the series of these series at these series. I will be a fixed to the about the series at these series at the series. I will be a fixed to the about the series at these settablishments. Types of the about the about the series.	\$802, 283 \$100, 607 \$277, 413 \$19, 615 \$1, 199, 918	\$987, 111 \$105, 962 \$797, 550 \$25, 372 \$1, 515, 995
A verage that it have not on of project in these establishments. A verage that it have not on of project in these establishments. A verage that of office as an interest per tou of product in these establishments. A verage that of takes per found project in these establishments. A verage that it takes per found project in these establishments. A verage that it is above elements per tou of product in these establishments.	544, 377 81, 474 , 184 , 510 , 036 2, 204	647, 728 \$1, 524 . 164 . 614 . 039 2, 341

By the above table the average cost per ton of product in the northern district is seen to be, for the labor of converting the materials into iron, \$1.474; for the salaries of officials and clerks, 18.4 cents; for supplies and repairs, 51 cents; and for taxes, 3.6 cents. In the southern district, for the labor of conversion, \$1.524; for salaries of officials and clerks, 16.4 cents; for supplies and repairs, 61.4 cents; and for taxes, 3.9 cents. The differences here are all very slight. Labor in the south is hired at cheaper rates, as will be seen by reference to Part II, where rates of wages are shown, but manifestly the larger quantity of material

handled in the south to obtain a ton of product, and the smaller efficiency, as is indicated by the tables devoted to the subject of efficiency of labor in Part II, more than offset these cheaper rates.

RUN OF FURNACE PIG IRON IN THE UNITED STATES.

COST OF ALL ELEMENTS PER TON OF PRODUCT.

[The ton considered is of 2,240 pounds.]

1	Northern dis	trict		Southern district.			
Establishment number.	Materials.	Other.	Total.	Establishment. number.	Materials.	Other.	Total.
63		\$2.082	\$13. 207	91		\$2. 461	\$9. 634
نق		1.673	12.820	92		3. 065	10. 26 7
67		1.744	13. 236	93	9. 334	2. 407	11. 741
6 8		a 2.092	a 14.611	94		3. 005	11.310
69		2. 330	14. 836	95		3.669	11,779
70		2, 276	13. 300	90		2.327	9. 881
71		2. 427	13. 688	97		2.463	10. 867
72 		1.669	13, 171 ;	98		2 066	12, 813
73 .		1.892	15.499	99	7. 216	2, 225	9. 441
74		2, 450	15. 452 :	100		2.634	9. 161
73		1.906	13, 803	101		3. 193	10.610
76 		2. 052	12. 424	102		1. 915	10. 822
17 		2. 116	15. 776	103	9. 325	-1.821	11. 146
78 		2. 757	13. 620	104	7. 929	1. 900	9. 829
79		2. 636	14, 594	105	8.340	1. 593	9. 933
M		2, 275	14. 522	106	8, 656	1.504	10, 160
fl .		2.725	14. 079	107		2. 196	12.071
8. ¹		3, 085	12.785	108	8, 833	1.170	10. 023
8 3		2, 786	13. 569	109	9. 766	2 637	12, 403
61		2. 366	14.016	110	8. 164	1. 459	9. 623
£5		2. 533	13.672	111	10.573	2. 340	12.913
h6 		2. 873	12. 997	112		2.068	10, 482
87		2.027	14.750	113		1. 782	11, 502
88		2. 595	13. 007	114	9. 362	2. 463	11. 825
89		2. 746	14. 858			i	
90. 	11.917	2 374	14. 291			ı	

a Not including taxes.

SUMMART OF COST OF ALL ELEMENTS PER TON OF PRODUCT.

[The ton considered is of 2,240 pounds.]

Items.	Northern district.	Southern district.
Establishments reporting the facts required for the statements below. Cost of all materials used in these establishments. Cost of labor, etc., in these establishments. Cost of all elements in these establishments. Tons of product in these establishments. Arerage cost of all materials per ton of product in these establishments. Average cost of abor, etc., per ton of product in these establishments. Average cost of all elements per ton of product in these establishments.	\$6, 387, 622 \$1, 199, 918 \$7, 587, 540 544, 877 \$11, 734 2, 204	24 \$3, 450, 439 \$1, 515, 995 \$6, 966, 464 647, 728 \$8, 414 2, 341 10, 753

The above table simply combines the elements of the preceding one from labor to taxes under the term "Other", and reproduces the total cost of materials from an earlier table in order to reach a summation of the whole. It is here seen that in the north the average cost per ton of product for materials is \$11.734, for all other items \$2.204, total \$13.938; and in the south, for materials \$8.414, for all other items \$2.341, total \$10.755.

SUMMARIES OF COST OF PIG IRON OF VARIOUS GRADES.

While the general Table I at the beginning of this part exhibits in detail the cost of various kinds of pig iron and other materials for each establishment, it is necessary to cluster the results relating to cost for each great district, in order that the average for each particular district may be ascertained. For this purpose, the returns for run of furnace, gray forge, and Bessemer pig iron have been summarized in nine short tables which follow, each accompanied with notes sufficient to explain the points brought out. From them it will be seen that the average cost of run of furnace pig iron in twenty-six establishments in the northern district of the United States is \$13.938 per ton, and that the average for twenty-four establishments in the southern district of the United States is \$10.755 per ton, and for the single establishment representing the continent of Europe, a fairly typical one, \$11.028. The Department was not fortunate enough to secure facts from Great Britain which would allow this particular feature of comparison to be brought out. The average cost of gray forge pig iron in eight establishments in the northern district of the United States is shown to be \$13.50, while for Great Britain the average in three establishments is \$8.031 per ton, and on the continent of Europe, in two Bessemer pig iron, as shown by twentyestablishments, \$9.065. four establishments in the northern district of the United States, costs on an average \$15.366; for four establishments in Great Britain, \$10.326, and for three on the continent of Europe, \$11.739 per ton.

Each of these nine tables is supplemented with a statement of the average cost per ton for insurance, interest, and depreciation of value of plant, which are here designated as theoretical elements of cost. These items have been given for only a very few establishments, as explained in the introduction, because producers do not, as a rule, consider them elements of cost; but such as have been reported in answer to inquiries on these points have been tabulated. It will be seen that for run of furnace pig iron in some of the establishments of the northern district of the United States these theoretical elements would add 16.6 cents to the average cost of one ton, while for the same kind of product in southern establishments the addition would be 16.8 cents. For the continent of Europe these elements would add 58.9 cents in the cases given. For gray forge pig iron in the establishments in the northern district giving the facts, the theoretical elements would add 19.7 cents to the average cost of one ton, for Great Britain 20 cents, and for the continent of Europe 6 cents. To the average cost of a ton of Bessemer pig iron in the northern district of the United States, for the establishments giving such information, the theoretical elements of cost would add 22.2 cents, and in Great Britain 8.4 cents. The tables referred to now follow:

SUMMARY OF COST OF RUN OF FURNACE PIG IRON IN TWENTY-SIX ESTABLISH-MENTS IN THE NORTHERN DISTRICT OF THE UNITED STATES.

[The detailed exhibit from which this summary is drawn may be found on page 35, et seq. The establishments covered are numbers 65 to 90, inclusive, being all the run of furnace establishments in the northern district of the United States from which reports were obtained. As may be seen, the periods covered are irregular and are in the years 1888, 1889, and 1890.]

		Tons of 2,	240 pound s.
Elements of c	ost	Cost of 544,377.	Average cost of one.
Ore		273, 207	\$6.968 .576 .502 8.827 .371
Total material		802, 283 100, 607 277, 413	11.734 1.474 .184 .510
Total		7, 587, 540	13, 938

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Nineteen establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Seven reported that they had no insurance. Ten establishments gave the amount paid for interest; the aggregate of these makes the sum below. Thirteen reported that there was no expenditure for interest, and for three no statement was obtained. One establishment only gave the amount charged to depreciation, which makes the sum below. Twenty-five reported that nothing was charged to this item. The amounts entered in the first column below are, of course, apportioned in the second column among the whole twenty-six establishments.]

Insurance	66, 395	\$0.008 .122 .036
Total	90, 571	. 160

SUMMARY OF COST OF RUN OF FURNACE PIG IRON IN TWENTY-FOUR ESTABLISH-MENTS IN THE SOUTHERN DISTRICT OF THE UNITED STATES.

[The detailed exhibit from which this summary is drawn may be found on page 35, st seq. The establishments covered are numbers 91 to 114, inclusive, being all the run of furnace establishments in the couthern district of the United States from which reports were obtained. As may be seen, the periods covered are irregular and are in the years 1888, 1899, and 1890.]

	Tone of 2,	240 pounds.
Elements of cost.	Coat of 647,728.	Average cost of one.
Ore	\$2, 245, 830 10, 011	\$3.467 .015
Limestone Coke.	304, 142 2, 889, 676	. 47C 4. 461 . 001
Total materials	5, 450, 459	8. 414 1. 524
Officials and clerks Supplies and ropairs Taxes	106, 962 397, 550	. 164 . 614
Total		10.755

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Nine establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Fifteen reported that they had no insurance. Ten establishments gave the amount paid for interest; the aggregate of these makes the sum below. Twelve reported that there was no expenditure for interest, and for two no statement was obtained. Four establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Nineteen reported that nothing was charged to this item, and for one no statement was obtained. The aggregates entered in the first column below are, of course, apportioned in the second column among the whole twenty-four establishments.]

Insr-ance Interest. Depreciation of value of plant.	61, 908	\$6.006 .096 .066
Total	108, 638	. 168

SUMMARY OF COST OF RUN OF FURNACE PIG IRON IN ONE ESTABLISHMENT ON THE CONTINENT OF EUROPE.

[The detailed exhibit from which this summary is drawn may be found on page 35, et seq. The establishment considered is number 115, being the only one making run of furusce pig from on the continent of Europe from which a report was obtained. As may be seen, the period covered is the calendar year of 1889.]

•		Tons of 2,240 pounds.	
Elements of cost.	Cost of 33,685.	Average cost of one.	
Ore	••••••	67, 942 18, 006	\$4. 595 2. 017 . 386 2. 880 . 007
Total materials Labor Officials and clerks Supplies and repairs Taxes	• • • • • • • • • • • • • • • • • • • •	47, 620 8, 225	9, 885 1, 414 , 244 , 488 , 039
Total		a 406, 581	b 12. 070

SUMMARY OF COST OF THEORETICAL RIGHENTS IN THE ABOVE.

[The establishment covered by this summary reported that it had no insurance, and that there was no expenditure for interest. It gave the amount charged to depreciation, which makes the sum credited to that item below.]

Insurance	l	1
Interest		
Depreciation of value of plant	\$19, 846	\$0, 559
		70.700
Total	19, 846	. 589

a From this amount should be deducted \$35,089, the value of lead, zinc, and other incidental prod-

SUMMARY OF COST OF GRAY FORGE PIG IRON IN EIGHT ESTABLISHMENTS IN THE NORTHERN DISTRICT OF THE UNITED STATES.

[The detailed exhibit from which this summary is drawn may be found on page 35, et seq. The establishments covered are numbers 52 to 59, inclusive, being all the gray forge establishments in the United States from which reports were obtained. As may be seen, the periods covered are irregular and are in the years 1888 and 1889.]

	Tons of 2.240 pounds.		
Elements of cost.		Cost of . 195,631.	Average cost of one.
Ore	• • • • • • • • • • • • • • • • • • • •	226, 402 106, 883	\$6. 384 1. 157 . 546 2. 943
Total materials	• • • • • • • • • • • • • • • • • • • •	257, 677 29, 255	11. 441 1. 317 . 150 . 565 . 027
Total		2, 641, 015	13. 500

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Six establishments gave the amount paid for insurance; the aggregate of these makes the aum credited to this item below. One reported that it had no insurance, and for one the agent of the Department failed to obtain a statement. Five establishments gave the amount paid for interest; the aggregate of these makes the sum below. Three reported that there was no expenditure for interest. Four establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Four reported that nothing was charged to this item. The aggregate entered in the first column below are, of course, apportioned in the second column among the whole eight establishments.]

Insurance	26, 647	\$0.011 .136
Total		. 197

ucts of manufacture.

b From this amount should be deducted \$1.042, the value of lead, zinc, and other incidental products per ton of iron produced, leaving the total not cost \$11.028.

SUMMARY OF COST OF GRAY FORGE PIG IRON IN THREE ESTABLISHMENTS IN GREAT BRITAIN.

[The detailed exhibit from which this summary is drawn may be found on page 35, et seq. The establishments covered are numbers 61 to 63, inclusive, being all the gray forge establishments in Great Britain from which reports were obtained. As may be seen, the periods covered are irregular and are in the years 18% and 1839.]

•		Tons of 2,240 pounds.	
Elements of cost.	Cost of 34,696.	Average cost of one.	
Ore	\$127, 733 1, 478 12, 539 99, 997	\$3. 681 . 043 . 361 2. 882 . 026	
Total materials Labor Officials and clerks Supplies and repairs Taxtes	242, 655 24, 178 1, 695	6, 993 . 697 . 049 . 263 . 029	
Total	278, 654	8. 031	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Two establishments gave the amounts paid for insurance and interest, the aggregate of these makes the sums credited to these items below. One reported that there were no expenditures for insurance and interest. All three establishments reported that nothing was charged to depreciation. The aggregates entered in the itst column below are, of course, apportioned in the second column among the whole three establishments.)

Insurance	6, 90L	. 199
Total		. 200

SUMMARY OF COST OF GRAY FORGE PIG IRON IN TWO ESTABLISHMENTS ON THE CONTINENT OF EUROPE.

[The detailed exhibit from which this summary is drawn may be found on page 35,ct seq. The establishments covered are unmbers 60 and 64, being all the gray forge establishments on the continent of Europe from which reports were obtained. As may be seen, the periods covered are irregular and are in the year 1889.]

	Tons of 2,240 pounds.	
Elements of cost.	Cost of 69.097.	Average cost of one.
Ore		\$3. 278 . 825 . 066 4. 101 . 044
Total materials	574, 515 29, 632 4, 765 15, 809 1, 637	8. 314 . 420 . 009 . 229 . 024
Total	626, 358	9. 0ú5

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Two establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. One establishment gave the amount paid for interest, which makes the sum below. One reported that there was no expenditure for interest. One establishment gave the amount charged to depreciation, which makes the sum below. One reported that nothing was charged to this item. The amounts entered in the first column below are, of course, apportioned in the second column among the two establishments.]

Insurance	4.002	\$0.001 .058 .001
Total	4, 168	. 060

SUBJECT OF THE STATE OF THE STA

Office data are equal to the first of the estimate a street man or found on page 25, of eq. The contribution of the contribution of the contribution of the first of the first of the contribution of the cont

	Time of 2.20 pounds.	
Electrical at last	Cast of	Average cost of one.
Ore	52, 302 345, 769 2,624, 367	. 433 2 23s
The unterest	115.42	. 206 13. 250 1. 386
Officials and Artist Supplies and Artist Taxes	25 56 11, 136	.154 .533 .039
[ital	12 22 62	15, 366

SCHOOLING - STORE CONTRACTIONS EXPRESSES IN THE ABOVE

Therese with bolimon a first the important and for instruction the aggregate of these makes the sum insulted to this from makes. The formers has men had no insurance, and for one the agent of the became in this to the insulted for interest; the aggregated in the results are the aggregated for interest; the aggregated of the results are the aggregated for interest, and or correct most first first of the aggregated that there was no expenditure for interest, and or correct most first first some ment of the first of the ment of the first most first properties expected in the first column below are, of our set in the set our hours among the value twenty-four establishments.

Insurance	81, rš5 :	\$0,009 .103 .110
r.a.	176, 951	. **1

SUMMARY OF COST OF CESSELVER FOR INFOUR ESTABLISHMENTS IN GREAT BEITAIN.

the detailed exhibit from which this summary is drawn may be found on page 35, et seq. The early exhibit is converged as a nine wild to 10 mill taken being all the Bessemer establishments in Great Broam from the converge warring and are may be seen, the periods covered are irregular and are not not seen also had lose.

		Tons of 2,240 pounds.	
Times are of succ.	Cost of 174,144	Average cost of one.	
Oracle Server Species State St	38, 740 459, 081	\$6, 123 . 194 . 211 2, 636	
Coal Potal materials Labor Obtails and circles Oppolies and repairs	1, 914 1, 507, 836 116, 429 9, 762 70, 771 3, 405	9.175 .669 .056 .406	
Fulal	1, 798, 203		

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE FOREGOING.

[One establishment only gave the amount paid for insurance, which makes the sum credited to this item below. Three reported that they had no insurance. One establishment only gave the amount paid for interest, which makes the sum below. Three reported that there was no expenditure for interest. All four establishments reported that nothing was charged to depreciation. The amounts entered in the first column below are, of course, apportioned in the second column among the whole four establishments.]

Elements of cost.	Tons of 2,240 pounds.	
	Coat of 174,144.	Average cost of one.
Insurance Interest Depreciation of value of plant	\$89 14,547	\$0.090 .034
Total	14, 636	.084

SUMMARY OF COST OF BESSEMER PIG IRON IN THREE ESTABLISHMENTS ON THE CONTINENT OF EUROPE.

[The detailed exhibit from which this summary is drawn may be found on page 35, et seq. The establishments covered are numbers 33 to 35, inclusive, being all the Bessemer establishments on the continent of Europe from which reports were obtained. As may be seen, the periods covered are irregular, and are in the years 1887, 1888, and 1889. The facts relating to the theoretical elements of insurance, interest, and depreciation were not reported.]

Elements of cost.	Tons of 2,240 pounds.	
	Cost of 194,412.	Average cost of one.
Ore: cinder, scrap, etc. (a)	591, 997	\$7. 456 209 3. 045
Total materials	2, 087, 938	10. 740 . 999
Total	2, 282, 237	11.739

& These costs are inseparably combined.

DIRECT LABOR, ETC., FROM THE MATERIALS IN THE EARTH TO THE FINISHED PRODUCT.

The question of the entire cost for labor in a ton of iron beginning with the raw materials as they lie in the earth is one which has recently been much considered. This, of course, is something quite different from what is commonly meant by the labor cost of a ton, which refers simply to the labor of the blast furnace in converting into iron, limestone, ore, and coke or coal, each of which may be considered as already a manufactured product having a labor cost of its own. To what extent it may be useful to trace the cost of a product back through the successive manufactured products made use of until finally the original elements in the earth, in the air, or in the waters of the earth are laid hold of is somewhat doubtful. If an ultimate analysis of such cost were possible the result, of course, would show the whole chargeable to labor, and the painful toil of the analysis might have been foregone by accepting this positive conclusion at the beginning. Yet if we limit the attempt and confine ourselves simply to discovering what was paid directly for labor at each successive stage, and what for certain other important items which in an ultimate analysis would be resolvable into labor, the result may throw some light on the comparative cost of production in different localities, or determine for us whether there is any general sum that can ordinarily be safely set down as chargeable to labor or to the other items considered, as has been often held and practiced in preparing tabular estimates on cost of production. In the thirteen short tables which are now to be given this is what has been done. In order to see exactly among what separate heads, in addition to direct labor, it was necessary to divide the costs, let us examine the first of these; and we should take note at the outset that in the general tables on cost of production, I to XI, the data have been classified under cost of labor, of salaries of officials and clerks, of supplies and repairs, and of taxes.

Looking at the first of these tables relating to cost of direct labor, etc., we see that the entire cost of the ton is \$13.971, and that the cost of converting the materials into this ton of iron, in other words, the blast furnace cost, was for labor \$1.595; for salaries of officials and clerks, 17.5 cents; and for supplies, repairs, and taxes, 53 cents; leaving all in the lines above, equalling \$11.671, as the cost of the materials assembled at the furnace. In the books of the establishment each of these is charged in against the cost of the finished product at what it is held to have cost on the spot. The ore, for instance, is charged at a rate per ton that would make 5,810 pounds cost \$6.658; in other words, at \$2.567 per ton, and so of the other materials. Now, when this 5,810 pounds of ore is followed to the mine where it was dug and the costs ascertained for the points above mentioned, we find that there was expended for labor \$4.452; for salaries of officials and clerks, nothing; for supplies, repairs, and taxes, 52.9 cents, making \$4.981 as the cost of the ore at the mine. The cost of transportation to the blast furnace is now ascertained to be 95 cents, which, added to the preceding, makes the ore at the furnace cost \$5.931; but we have already noted that this ore at the furnace is rated as costing \$6.658, which we now see to be an excess over its actual cost of 72.7 cents. If the ore at the furnace is charged scrupulously at the exact figure of cost, which presumably is not always the case, as it might sometimes be difficult of ready determination, then this excess must be considered as wholly the profit of the mining establishment. If on the other hand the blast furnace simply calculates in the easiest way the approximate cost of ore and charges it in at that figure, making sure that the sum is high enough, as is quite likely the usual way, then this excess is partly only the profit of the miner, the remainder going to enlarge the profit of the blast furnace.

We now see that in addition to the items of cost provided for in tables I to XI there are also necessary in the presentation under view a column for cost of transportation of materials to point where used and one for difference between ts of materials and costs as charged against

the pig iron produced on the books of the blast furnace. What has here been said of the ore is, of course, equally applicable to the coal, the coke, and the limestone.

The utmost effort to get at the truth in these statements has been made, but the inherent difficulties, greatly in the way of diverse methods of bookkeeping, are such that the results are not wholly satisfactory. Yet in their principal features there is no doubt of their substantial accuracy. The column of difference between actual cost and blast furnace cost is the most unsatisfactory. In the column of cost of officials and clerks quite frequently nothing is entered. There are several reasons why this may occur. Often the work is administered by a foreman or boss whose wages are charged with other labor, and often the mines and coke ovens are managed by the blast furnace and the whole charge for supervision is made against the latter. Frequently the coke works own or control the coal mines by which they are supplied, and the trifling charge for administration is not divided in the accounts. Some of these establishments are included in the general tables, pages 31 to 61, but others are not. The tables referred to are now presented.

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Northern district of the United States. One ton of 2,240 pounds of run of furnace pig iron. The quantities and costs of ore, coal, coke, and limestone are the actual quantities and costs of the particular materials used.

Materials and successive stages of conversion.		Officials and clerks.	repairs,	Trans- port to point where used.		Total.				
Production of 5,810 pounds of iron ore Production of 4,528 pounds of limestone Production of 6,797 pounds of bituminous coal. Conversion of above coal into 3,990 pounds of coke. Conversion of above materials into 2,240 pounds of pig iron.	\$4. 452 . 526 2. 258 . 615 1. 595	\$ 0. 175	. 121	\$0. 950 . 040 . 707	.061	\$6. 658 . 748 3. 567 . 698 2. 300				
Total cost of one ton of pig iron	9. 446	. 175	1. 562	1. 007	1. 101	13. 971				
BUNMARY OF	THE A	OVE.			•					
Total cost of ore, limestone, coal, and coke. Cost of direct labor in producing the above materials. Per cent. of cost of direct labor in producing the above materials. Cost of of process of conversion. Cost of direct labor in process of conversion. Per cent. of cost of direct labor in process of conversion. Cost of direct labor in one ton of pig iron. Cost of direct labor in one ton of pig iron. Per cent. of cost of direct labor in one ton of pig iron.										

[Northern district of the United States. One ton of 2,240 pounds of Bessemer pig iron. The quantities of all the materials and the costs of ore, cosl, and coke are the actual quantities and costs of the particular materials used. A detailed analysis of the cost of the limestone used could not be obtained, but that given is of a limestone produced in the same locality and having a total cost approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Transport to point where used.		Total.
Production of 3,685 pounds of irou ore. Production of 786 pounds of limestone. Production of 2,946 pounds of bitu- minous coal.	\$1.903 ,112 .520	\$0. 059 . 001	\$0.681 .002 .088	\$0.063	\$3.045 .228		\$9. 412 . 346 . 608
Conversion of above coal into 2,200 pounds of coke. Production of 31 pounds of cinder,	. 487	. 038	. 183	. 017	2.043	. 278	2. 981
scrap, etc. (See below). Conversion of above materials into 2,210 pounds of pig iron.	1. 440	. 137	. 250	. 055	ļ		1.883
TotalCost of above 31 pounds of einder, scr			1. 204 total of		5. 316 an be gi		15. 2 29 . 9 52
Total cost of one ton of pig iron sum		THE AL		•••••		••••••	15. 281
Total coat of ore, limestone, coal, and Cost of direct labor in producing the s Per cent. of cost of direct labor in pro-	coke bove ma	terials.	materia		• • • • • • • •	•••••••	\$13.347 \$2.972 22
Total cost of process of conversion Cost of direct labor in process of conv Per caut, of cost of direct labor in pro-	ersion	conversi	on	•••••		• • • • • • • • • • • • • • • • • • •	\$1.882 \$1.440 77
Total cost of one ton of pig iron	ron		••••••	•••••			\$15. 281 \$4. 412

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Northern district of the United States. One ton of 2,240 pounds of B weemer pig iron. The quantities of all the materials and the costs of coke and of the coal used in said coke are the actual quantities and costs of the particular materials used. Nineteen kinds of ore were used, but the costs of eleven only were obtained. The costs of the ore shown below were computed from the known costs of the eleven. Detailed analyses of the costs of the limestone used and of the coal used as such could not be obtained. The analysis of cost of limestone given is from an establishment having a total cost approximating the total cost of the limestone actually used.]

Materials and successive stages of conversion.	Direct labor.	Officials and olorks.		Transport to point where used.	foregoing actual costs	Total.				
Production of 8,640 pounds of iron ore Production of 1,050 pounds of limestone Production of 4,488 pounds of bituminous coal Conversion of above coal into 3,108 pounds of	.150	\$0. 121 . 001 . 088 . 080	\$0.804 .002 .290		. 032	\$9, 274 .373 1, 403 2, 632				
ooke. Production of 45 pounds of coal used as such. (See below.) Conversion of above materials into 2,240 pounds of pig iron.		. 820	. 941							
TotalCost of above 45 pounds of bituminous coal, o	5. 733 nly the 1	.510 total of v	2. 108 Thich can	4. 992 a be give	8. 184 B.	16. 477 . 026				
Total cost of one ton of pig iron				•••••	•••••••	16. 503				
SUMMARY OF	THE A	BOVE.								
Total cost of ore, limestone, coke, and coal used in said coke Cost of direct labor in producing the above materials Per cent. of cost of direct labor in producing the above materials Total cost of process of conversion Cost of direct labor in process of conversion.										
Per cent. of cost of direct labor in process of c Total cost of one ton of pig iron	•••••			•••••	••••••	\$16, 503 \$5, 733				

[Northern district of the United States. One ton of 2,240 pounds of Bessemer pig iron. The quantities of all the materials are the actual quantities of the particular materials used. Of the ore actually used the cost of a part only was obtained, and from that cost the costs given below were calculated. Detailed analyses of the costs of the limestone, coal, and coke need could not be obtained, but those given are from establishments having total costs approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Transport to point where used.	Timber	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
Production of 3,686 pounds of iron ore.	\$3. 122	\$0.140	\$0.757	\$0,115	\$4. 525		\$1.678	\$10.337
Production of 963 pounds of limestone.	.124	.006	.008		. 215		.077	. 430
Production of 2,824 pounds of bituminous coal.	.866	. 021	. 007			\$0.017		.911
Conversion of above coal into 1,939 pounds of coke.	.302	.000	. 052	- 	. 582	·····	. 035	. 980
Conversion of above materials into 2,240 pounds pig iron.	1. 155	. 151	. 513	.041				1. 860
Total cost of one ton of pig iron.	5. 569	. 327	1. 337	. 156	5. 322	.017	1.790	14. 518
-		SUMMAR	Y OF THE	E ABOVE				٠.
Total cost of ore, limestone, c Cost of direct labor in produc Per cent. of cost of direct labor	ing the	above ma	terials		••••••			\$12,658 \$4,414 35
Total cost of process of conve Cost of direct labor in process Per cent. of cost of direct labor	rsion	ersion .					••••••	\$1.860 \$1.155 62
Total cost of one ton of pig ire Cost of direct labor in one ton Per cent. of cost of direct labor	of pig i	ron	• • • • • • • • • • • • • • • • • • • •			• • • • • • • • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	\$14. 518 \$5, 569

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Northern district of the United States. One ton of 2,249 pounds of Bessemer pig iron. The quantities of all the materials and the costs of coke and of the coal used in said coke are the actual quantities and costs of the particular materials used. Twelve kinds of ore were used, but the costs of seven only were obtained. The costs of the ore shown below were computed from the known costs of the seven. Detailed analyses of the costs of the limestone used and of the coal used as such could not be obtained. The given analyses of costs of the limestone and of the coal used as such are from establishments having total costs approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Transport to point where used.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.	
Production of 3.695 pounds of iron ore. Production of 948 pounds of limestone. Production of 2,816 pounds of bitu- minous coal.		\$0.095 .001	\$0.697 .002 .195	\$0.082	a\$1.732 .254	84.814 .089	\$9.777 .431 .863	
Conversion of above coal into 2,236	. 414	.031	.015	. 003	1. 509	. 209	2. 181	
pounds of coke. Production of 317 pounds of bituminous coal used as such. Production of 29 pounds of cinder,	. 095	.012	. 005		. 048	. 001	. 161	
scrap, etc. (See below.) Conversion of above materials into 2,240 pounds of pig iron.	1. 665	. 259	. 416	. 069			2. 309	
TotalCost of the above 29 pounds of cinder					3.543 ich can l		15. 752 . 071	
Total cost of one ton of pig iron						••••••	15. 823	
	BUMMAR	Y OF TH	E ABOVE					
Total cost of ore, limestone, coal, and c Cost of direct labor in producing the s Per cent. of cost of direct labor in pro	ducing	terials	e materi	als			27	
Total coat of process of conversion. Cost of direct labor in process of conversion. Per cent of cost of direct labor in process of conversion.								
Total cost of one ton of pig iron Cost of direct labor in one ton of pig ir Per cent. of cost of direct labor in one				•••••			\$15. 823 \$5. 274	
4 Poll-ray changes calls h Includes								

Bailway charges only.
 Includes considerable for water transportation which was not separable.

[Northern district of the United States. One ton of 2,240 pounds of foundery pig iron. The quantities of all the materials and the costs of ore, limestone, and coke are the actual quantities and costs of the particular materials used. A detailed analysis of the cost of the cost used could not be obtained but that given is of a cost produced in the same locality and having a total cost approximately the same. The separation of the costs other than for direct labor and transportation was impossible.]

Materials and ancoessive stages of conversion.	Direct labor.	Transport to point where used.	All other coets.	Total.
Production of 4,234 pounds of iron ore	. 090 . 726 . 348	.068	\$1.797 .112 .170 1.224 .641	. 806 5. 274 1. 800
Total cost of one ton of pig iron	3. 701	. 6. 040	3.944	13, 685
• BUMMARY OF THE ABOVE.				
Total east of ore, limestone, coal, and coke				\$11.885 \$2.512 21
Total cost of process of conversion. Cost of direct labor in prucess of conversion. Per cent of cost of direct labor in process of conversion			. 	\$1,800
Total cost of eneton of pig iron. Cost of direct labor in one ton of pig iron. Per cent, of cost of direct labor in one ton of pig iron.	• • • • • • • • •		· • • • • • • • • • • • • • • • • • • •	\$18. G83 \$3. 701

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Northern district of the United States. One ton of 2,240 pounds of hot blast charcoal pig iron. The quantities and costs of ore, limestone, wood, and charcoal are the actual quantities and costs of the particular materials used. The separation of the costs other than for direct labor and transportation was impossible.]

Materials and successive stages of conversion.	Direct labor.	Transport to point where used.	All other conta.	Total.
Production of 4,108 pounds of iron ore	. 003 1. 786 1. 500	. 014 1. 786 1. 800	. 238	\$7. 044 . 017 8. 810 3. 510 1. 826
Total cost of one ton of pig iron	6. 737	6.311	8. 159	16. 207
Total cost of cre. limestone, wood, and charcoal		••••••		\$5, 209 87 \$1, 826 \$1, 438 70 \$10, 207 \$6, 737

s This limestone is the refuse of a building stone quarry and is sold much below cost of production. The figures given represent cost to the furnace.

[Southern district of the United States. One ton of 2,240 pounds of run of furnace pig iron. The quantities of all the materials and the costs of ore, coke, and limestone are the actual quantities and custs of the particular materials used. A detailed analysis of the cost of the coal used could not be obtained, but that given is from an establishment having a total cost approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Sup- plies and repairs	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.			
Production of 5,818 pounds of iron ore.	\$2. P 23		\$0, 156	\$0.018	\$0. 779		\$0.172	\$3.948			
Production of 971 pounds of limestone.	.127		. 024	.001			.083	. 235			
Production of 5,789 pounds of bituminous coal.	2, 284	\$0. 032	. 194	.009	ļ. 	\$0.017	. 070	2: 606			
Conversion of above coal into 3,474 pounds of coke.	. 573	. 068	.048	. 009			. 571	1. 264			
Preduction of 410 pounds of bituminous coal used as such.	. 162	.002	. 014	.001		001	107	. 287			
Conversion of above materials into 2,240 pounds of pig irou.	1. 324	. 089	. 144	. 036				1.593			
Total cost of one ton of pig iron.	7. 293	. 191	. 575	. 074	779	.018	1. 003	9. 933			
	SUZ	IMARY O	THE A	BOVE.			~				
Cost of direct labor in product Per cent. of cost of direct lab	Total cost of ore, limestone, coal, and coke										
Total cost of process of conv Cost of direct labor in proces Per cent. of cost of direct lab	of con	version.		· · · · · · · ·			• • • • • • • • • • • • • • • • • • •	\$1.593 \$1.324 83			
Total cost of one ton of pig i Cost of direct labor in one to Per cent. of cost of direct lab	n of pig	iron					••••••••••••	\$9. 983 \$7. 293 73			

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Southern district of the United States. One ton of 2,240 pounds of run of furnace pig iron. The quantities of all the materials and the costs of ore, ocal, and coke are the actual quantities and costs of the particular materials used. A detailed analysis of the cost of the limestone used could not be obtained, but that given is from an establishment having a total cost approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as obarged by blast furnace.	Total.
Production of 5,072 pounds of iron ore.	\$1. 234	\$0.052	\$0.088	\$0.009	\$0.566		\$0.011	\$1. 960
Production of 1,164 pounds of limestone.	. 122	.017	. 026	.001	. 130		. 028	. 824
Production of 5,744 pounds of bituminous coal.	2. 263	. 060	. 086	. 003	. 574	\$0 020	. 437	3. 443
Conversion of above coal into 3.694 pounds of coke.	. 528	- 	. 242	. 004		· • • • • • • • • • • • • • • • • • • •	. 026	. 800
Conversion of above materials into 2,240 pounds of pig irou.	1.737	. 156	. 703	.038				2. 634
Total cost of one ton of pig iron.	5. 884	. 285	1. 145	. 055	1. 270	.020	. 502	9. 161
	SUM	MARY OI	THE AP	OVE.				, ,
Tetal cost of ore, limestone, of Cost of direct labor in product Per cent, of cost of direct labor	ing the	above m	sterials.		 .			64
Total cost of process of conve Cost of direct labor in process Per cent. of cost of direct labo	raion	rersiou.		• • • • • • • • •				\$2.634 \$1.737
Total cost of one ton of pig ir Cost of direct labor in one ton Persent, of cost of direct labor	on of pig i	rou	••••••	••••••	••••••			\$9, 161 \$5, 884 64

[Southern district of the United States. One ton of 2,240 pounds of run of furnace pig iron. The quantities of all the materials, and the costs of ore and coke are the actual quantities and costs of the particular materials used. Detailed analyses of the costs of the limestone and coal used could not be obtained, but those given are from establishments having total costs approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks	Supplies and repairs.	Taxes.	Trans- port to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
Production of 4,605 pounds of	\$2,111	\$0.170	\$0.361	\$0.048	\$0.524		\$0,203	\$3.417
Production of 1,772 pounds of	. 252	. 003	004		. 158		067	. 483
Production of 3,862 pounds of heinminous, col.	1.025	.017	.044	.012	ļ	\$0.021	.346	1.465
Conversion of above coal into 2,327 pounds of coke.	. 329	004	. 043	. 005	. 873		1.455	2. 799
Conversion of above materials into 2,240 pounds of pig iron.	. 595	.170	. 593	101				1. 450
Total cost of one ton of pig iron.	4. 812	. 453	1. 045	. 166	1, 555	. 021	2.071	9. 623
	SUN	MARY O	THE AI	30VB.				
Total cost of ore, limestone, c Cost of direct labor in produc Per cent. of cost of direct lab	ing the	above m	aterials. Lie above	materi	als	••••••		\$8.164 \$2.717 46
Total cost of process of conve Cost of direct labor in process Per cost of cost of direct lab	s of con	rersion .		••••••				\$1. 450 \$6. 505 41
Total cost of one ton of pig ir Cost of direct labor in one to For cost. of cost of direct lab	on a of pig	iron			· · · · · · · · · · · · · · · · · · ·	• • • • • • • •	••••	\$0. 023 \$1. 313 45

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Southern district of the United States. One ton of 2,240 pounds of run of furnace pig iron. The quantities of all the materials and the costs of ore, coal and coke are the actual quantities and costs of the particular materials used. A detailed analysis of the cost of the limestone used could not be obtained, but that given is of a limestone produced in the same locality.]

Materials and successive stages of conversion.	Direct labor.	Officials aud clerks.	Sup- plice and repairs.	l	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
Production of 5,406 pounds of iron ore.	i	90. 051	\$0, 142	\$ 0. 007			\$0.014	\$1. 561
Production of 1,000 pounds of	. 166	.014	. 023	.001	\$0. 126	·	. 138	. 406
Production of 7,576 pounds of	3.617	. 121	.348	.098	. 152	\$0.008	•••••	4. 254
Conversion of above coal into 4,004 pounds of coke. Production of 23 pounds of	. 712	. 027	. 053	. 002	. 062		.067	.943
inder, scrap, etc. (See belew.) (Seeversion of above materials into 2,246 pounds pig- iron.	1. 816	. 066	. 555	. 034				2.461
Total	7. 5 98 nder, scr	. 260 ap, etc.,	1. 121 only the	.052 total of	.300 which	. uos an be gi	.219 Ven	9. 627 . 907
Total cost of one ton of			THE AL		•••••••	••••••	••••	1. 634
net of ore, limestone, or derect labor in produc i, of gost of direct lab	er in pro	ducing t	he above	materis	ak			81
I dispet labor in precess at of post of direct lab		remeion						\$2.461 \$1.816 74
mt of past of direct lab capt of one ten of pig is if direct labor in one ten mt of capt of direct labor	of pigi	roa ton of p	ig iron .	••••••	••••••		•••••••••••	\$6. 634 \$7. 596 79
								

"[Southern district of the United States. One ion of 2,240 pounds of run of furnace pig iron. The quantities of all the materials and the costs of ore, coal, and coke are the actual quantities and costs of the particular materials used. A detailed analysis of the cost of limestone could not be obtained, but that given is from an establishment having a total cost approximately the same.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.		
Production of 5,131 pounds of iron ore.	\$1. 248	\$0,053	\$0.089	\$0.000	\$0.573		- \$0.011	\$1.983		
Production of 1,340 pounds of limestone.	.141	.019	.030	. 002	.150		. 049	891		
Production of 6,621 pounds of bituminous coal.	2. 609	.070	.099	.003		\$ 0. 0 23	. 096	2, 902		
Conversion of above coal into 3,973 pounds of coke. Production of 31 pounds of	. 872		. 137	004	.457		. 661	2.131		
cinder, scrap, etc. (See below.) Conversion of above materials into 2,240 pounds pig iron.	2. 088	. 209	. 879	.017	ļ 	 .	,	2. 193		
· Total			1.234 , only th		1. 180 (which			10.600		
Total cost of one ton of	pig iroz	a		••••••		•••••	••••••	10. 610		
SUMMARY OF THE ABOVE. Total cost of ore, limestone, coal, and coke Cost of direct labor in producing the above materials Per cent of cost of direct labor in producing the above materials Total cost of process of conversion Cost of direct labor in process of conversion Per cent of cost of direct labor in process of conversion Cost of direct labor in ore ton of pig iron Cost of direct labor in one ton of pig iron Per cent of cost of direct labor in one ton of pig iron Per cent of cost of direct labor in one ton of pig iron										

COST OF DIRECT LABOR, ETC., IN ONE TON OF PIG IRON.

[Great Britain. One ton of 2,240 pounds of Bessemer pigiron. The quantities of all the materials at the costs of limestone, coal, and coke are the quantities and costs of the particular materials used. A de. "ed analysis of the cost of the ore used could not be obtained, but that given is of an ore produced in the same locality.]

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total
Production of 3,944 pounds of iron ore.	i	\$0.019	\$0. 143	\$0.023	83. 205		\$1. 739	\$5.791
Production of 724 pounds of limestone.	. 125		.013		. 032			. 170
Production of 3,671 pounds of bituminous coal.	1.601	. 084	. 237	.048		\$0.257		2. 227
Conversion of above coal into 2,717 pounds of coke. Production of 262 pounds of	. 338	. 030	. 230	-	ļ. 	- 		. 598
cinder, scrap, etc. (See below.)								
Conversion of above materials into 2,210 pounds pig iron.	. 603	.015	. 580	.012				1.210
Total			1.203 only th	. 083 e total o	8. 237 which	.257 can be gi	1.739 Ven	9. 996 . 2:0
Total cost of one ton of	pig iron		•••••	•••••		••••	•••••••	10. 216
	8UM	MARY O	P THE A	BOVE.				İ
Total cost of ore, limestone, c Cost of direct labor in produci Per cent. of cost of direct labor	ng the a	bove mai	erials					\$8, 786 \$2, 726 31
Total cost of process of conve Cost of direct labor in process	rsion							\$1,210
Per cent. of cost of direct labo	r in proc	cess of co	pversion					50
Total cost of one ton of pig ire	of pig i	ron						\$10. 216 \$3. 329
Per cent. of cost of direct labor	r in one	ton of p	ig iron	•••••	•••••	• • • • • • • • • • • • • • • • • • • •		13

Freight, and the In order to render the examination and comparison of the various points in the preceding tables more easy, the figures have been drawn off in a different form, which combines all the establishments into a single table for each material and stage of the work. These tables follow:

PRODUCTION OF THE IRON ORE NECESSARY FOR ONE TON OF PIG IRON.

		Cost.						
· Kind of iron. of ore	Quantity of ore (pounds).	Direct labor.	Officials and clerks.	Supplies, repairs, and taxes.	Trans- port to point where used.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.	
MORTHBEN DISTRICT, U. S.							. •	
Run of furnace. Bessemer	3, 686	\$4. 452 1. 903 2. 537 8. 122 2. 357 1. 378 2. 010	\$0. 059 . 121 . 140 . 095	\$0,529 .764 .804 .872 .779	\$0.950 8.045 2.631 4.525 61.732 2.270 2.711	\$0. 727 3. 641 2. 981 1. 678 8. 4. 1. 792- 6. 2. 323	96. 658 9. 412 9. 274 10. 337 9.777 5. 445 7. 044	
Run of furnace	4, 695	2. 828 1. 234 2. 111 1. 347 1. 248	. 052 . 170 . 051 . 053	. 174 . 097 . 409 . 149	. 779 . 566 . 524	.172 .011 .203 .014	3. 948 1. 960 3. 417 1. 561 1. 983	
GREAT BRITAIN.			İ					
Beesemer	3,944	. 663	. 019	. 166	1. 206	1.730	5. 791	

PRODUCTION OF THE LIMESTONE NECESSARY FOR ONE TON OF PIG IRON.

	.						
Kind of Iron.	Quantity of lime- 'stone (pounds).	Direct labor.	Officials and clerks.	Suppliea, repairs, and taxes.	Transport to point where used.	Difference botween foregoing actual costs and costs as charged by blast furnace.	Total.
MONTHERN DISTRICT, U. S.							
Kun of Airusco	1, 060	\$0. 526 .112 .150 .124 .135 .090 .003	\$0, 001 .001 .006 .001	\$6. 121 . 002 . 002 . 008 . 002	\$0. 040 . 228 . 188 . 215 . 254 . 068 . 014	\$0.001 .003 .033 .077 .039 .6.113	\$0. 748 . 346 . 878 . 430 . 481 . 270 . 017
MILTHUMN BIATHUT, U. S. JUN OF CHYMGO JUN OF CHYMGO JUN OF CHYMGO JUN OF CHYMGO JUN OF CHYMGO JUN OF CHYMGO	1,773 1,000	. 127 . 123 . 252 . 106 . 141	.017 .002 .014 .019	. 025 . 027 . 004 . 024 . 032	. 130 . 158 . 126 . 150	. 083 . 028 . 067 . 138 . 049	. 235 . 324 . 463 . 408 . 391
MRAT BRITAIN.	734	. 125		.013	. 082	••••••	. 170

a Railway charges only.

b Includes considerable for water transportation, which is not separable.

c Includes everything but direct labor and transport to point where used.

PART I. - COST OF PRODUCTION.

PRODUCTION OF THE COAL NECESSARY FOR ONE TON OF PIG IRON.

21		1		C	ost.		•
Kind of iron.	Quantity of bitu- minous coal (pounds).	Direct labor.	Officials and clerks.	Supplies, repairs, and taxes.	Trans- port to point where used.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
ROBTHERN DISTRICT, U. 8. Run of furnace. Ressemer Bessemer Bessemer Feasemer Foundery Hot blast charcoal	6, 797 2, 946 4, 518 2, 824 3, 133 3, 614 (c)	\$2, 258 . 520 . 954 . 866 . 703 . 726 1. 786	\$0.038 .021 .012	\$0.349 .088 .290 .024 .200	\$0. 707 . 048 1. 786	.001 0.170 d.238	\$2,567 .009 &1,429 .911 .964 .896 3,810
Bouthern District, U. S. Bun of furnace	6, 199 5, 744 3, 862 7, 576 6, 621	2. 446 2. 263 1. 025 3. 617 2. 609	.034 .060 .017 .121 .070	236 . 109 . 077 . 364 . 125	. 574 . 152	. 177 . 447 . 346 . 098	2. 893 3. 443 1. 465 4. 254 2. 902
Bessemer	8, 671	1. 601	.084	.542			2. 227

a There is here included 2.6 cents, the cost of 45 pounds of coal not converted into coke which cannot be distributed through the several items of cost.

§ Includes everything but direct labor.

« Wood, 2.38 cords.

« Includes everything but direct labor and transport to point where used.

CONVERSION OF COAL INTO THE COKE NECESSARY FOR ONE TON OF PIG IRO N

				. 0	ost.		
Kind of iron. of c	Quantity of coke (pounds).	Direct labor.	Officials and clerks.	Supplies, repairs, and taxes.	Transport to point where used.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
MORTHERN DISTRICT, U. S.		,					
Bon of furnace Bessemer Bessemer Bessemer Bessemer Foundery Hot blast charcoal	8, 990 2, 209 3, 108 1, 939 2, 236 2, 468 (b)	\$0. 615 . 437 . 558 . 802 . 414 . 348 1. 500	\$0. 023 . 030 . 009 . 031	90. 023 . 200 . 071 . 052 . 018	\$2. 043 1. 973 . 582 1. 509 3. 702 1. 800	\$0, 060 .278 .035 .209 & 1, 224 & .210	90. 808 2. 981 2. 632 . 980 2. 181 5. 274 3. 510
Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace	8, 474 3, 694 2, 327 4, 094 8, 978	.578 .528 .329 .712 .872	. 068 . 094 . 027	. 052 . 246 . 048 . 055 . 141	. 873 . 082 . 457	.571 .026 1.455 .067	1. 264 . 800 2. 799 . 943 2. 181
GREAT BRITAIN. Bessemer	2, 717	. 838	. 030	. 230			. 506

e Includes everything but direct labor and transport to point where used. 5 Charcoal, 100 bushels.

CONVERSION OF THE MATERIALS INTO ONE TON (2,240 POUNDS) OF PIG IRON.

	Cost.					
Kind of iron.	Direct labor.	Officials and clerks.	Supplies, repairs, and taxes.	'Total.		
NORTHERN DISTRICT, U. S.				30		
Run of furnace Bessemer. Bessemer. Bessemer. Bessemer. Hossemer. Bessemer. Hossemer. Hossemer.	\$1.595 1.440 1.534 1.155 1.665 1.159 1.438	\$0.175 .137 .320 .151 .259	\$0,530 .305 .941 .554 .475 a.641. a.388	\$2,300 1,882 2,795 1,860 2,399 1,800 1,826		
SOUTHERN DISTRICT, U. S.						
Run of furnace. Run of furnace. Run of furnace. Run of furnace. Run of furnace. Run of furnace.		.089 .156 .170 .056 .209	.180 .741 .694 .589 .896	1, 593 2, 634 1, 459 2, 461 3, 193		
GREAT BRITAIN.	1400	-	1 2			
Bessemer	. 603	.015	. 592	1. 210		

a Includes everything but direct labor.

TOTAL COST OF ONE TON OF PIG IRON FROM THE MINING OF THE MATERIALS TO THE FINISHED PRODUCT, INCLUSIVE.

Kind of tron.	Direct labor.	Officials and clerks.	Supplies, repairs, and taxes.	Transport to point where used.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
MORTHERN DISTRICT, U. S.			-			
Run of furnace. Bessemer Bessemer Bessemer Bessemer Houndery Hot blast charcoal	5. 569	\$0. 175 . 220 . 510 . 327 . 308	\$1.553 1.359 2.108 1.510 1.474	\$1.607 5.316 4.992 5.322 6.543 6.040 6.311	\$1.101 3.922 3.134 1.790 d 5.063 / 3.944 / 2.159	\$13. 971 6 15. 281 6 16. 503 14. 518 6 15. 823 13. 665 16. 297
SOUTHERN DISTRICT, U. S.						•
Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace	7, 293 5, 884 4, 312 7, 598 6, 958	. 191 . 285 . 453 . 269 . 351	. 667 1. 220 1. 232 1. 181 1. 292	.779 1.270 1.555 .360 1.180	1.003 .502 2.071 .219 .819	9. 923 9. 161 9. 623 # 9. 634 À 10. 610
GREAT BRITAIN.		1				
Bessemer	3. 329	. 148	1.543	8. 237	1. 739	ć 1 0. 216

a Includes 5.2 cents, the cost of 31 pounds of cinder, scrap, etc., only the total cost of which can

Includes 2.6 cents, the cost of 45 pounds of bituminous coal, only the total cost of which can

e For the iron ore railway charges only are here included. & For the iron ore a considerable sum for water transportation is here included. e Includes 7.1 cents, the cost of 29 pounds of cinder, scrap, etc., only the total cost of which can

[/] Includes everything but direct labor and transport to point where used.

Junctudes 0.7 cents, the cost of 23 pounds of cinder, scrap, etc., only the total cost of which can

some cont, the cost of \$1 pounds of cinder, scrap, etc., only the total cost of which can

²³ cents, the cost of 202 pounds of cinder, scrap, etc., only the total cost of which can

PER CENT. OF COST FOR DIRECT LABOR IN ONE TON OF PIG IRON FROM THE MINING OF THE MATERIALS TO THE FINISHED PRODUCT, INCLUSIVE.

	Per cent. that cost for direct labor is of total cost in—				
Kind of iron.	Produc- ing the materials.	Converting the materials into pig iron.	Both pro-		
NORTHERN DISTRICT, U. S.			1 -:		
Run of furnace Bessemer Bessemer Bessemer Bessemer Bessemer Foundery Hot blast charcoal SOUTHERN DISTRICT, U. S.	31 35 27	69 77 65 62 69 64 79	- 25 29 25 29 32 27 42		
Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace Run of furnace		- 83 - 66 41 74 65	78 64 45 70 . 68		
GREAT BRITAIN.		,	- •		
Beesemer	81	. 50	**		

The most apparent thing in the preceding tables is the complete lack of agreement between the facts for the different establishments. Yet it must be remembered the figures are not estimates nor based on estimates, but are worked out from the actual accounts of the concerns for a definite period, usually a year. In the quantities of materials used there is the least variation in ore—the five establishments producing Bessemer using from 3,640 to 3,944 pounds. For the run of furnace establishments the range is from 4.695 to 5,818 pounds. But in limestone, from 724 to 1,050 pounds are used for Bessemer and from 971 to 4,528 pounds for run of furnace. Passing by the coal, where we see from 2,824 to 4,513 pounds used for Bessemer iron, and 3,862 to 6,797 pounds for run of furnace; and considering coke, the resulting product, we find from 1,939 to 2,236 pounds sufficient for Bessemer and from 2,327 to 3,990 pounds necessary for run of furnace. The larger quantities used. in the southern establishments is what we might expect from earlier tables where this was more fully brought out (see page 65). Such wide differences in the necessary quantities of materials and consequently in cost of labor are not likely to be more than partially overcome in the future, since they are due to the relative purity or comparative inherent value of each for the purpose. In the several items of cost in ore, limestone, coal, and coke, we see extraordinary differences. Of course these costs are for differing quantities, and if we turn to the general tables on production, I to XI, where hundreds of establishments are treated, nothing is more marked than the fact that there is not, as yet, a scientific determination of the necessary expenditures in labor, in administration, or in the different classes of supplies in the production of these materi-

in the fire at the inference is not arranging the radialie Chairing for after the tieranen seems onemstre hat from a estimate the first that the tradition of the satisfaction to some street it said to make streetheethe und megini vay. In the matter of managementation to toleral themself, the most for main of the different careerals 3 of a the southern establishments, as we might effect, then compared the forthern. In the last of the those lanes a most the set out that the use for firest labor is if the title not to the title field from the materials, in sunresting the named and the contract is not processed monaged. We see need that the performed and for abor in presidence the makemain the Besember and in the form is from 12 to 15 per leant of the total 1945 it the materials, and it the 195th for the of farmine from than it is from 40 to 41 ter term of sizes than. The signature as to and the markers has will the torth. In me conversion of the materials are for the two weather went to be note evenly balanced. However, men are the vice itsaurrements in these results that it is tieur to lecture sum can se ustit incel in is generally representative, for any mentity of the most for fired labor in for any other of the items MINISTER TEL

COST OF FULLECY, ETC., IN FREYTOUS YEARS.

The Legarinean has made tensiderable effort to secure facts relating to the test of making put iron, etc., in the past, but these efforts have not been trowned with very distance stoness; yet what it has been able to find it press herewith. The stores from which the tables are drawn are stated in the appropriate places for each showing. The earliest period given is 1545.

COST OF MARTY'S COME PUR IRON DY WALES DY 1848.

(This and the succeeding majors in the final me on the cost of producing iron on the Schuylkill river. Fourts was a page 121 are from "Essuments relating to the manufacture of iron in Pennsylvania, page senset on behalf of the convention of iron masters which met in Philadelphis on the 20th of the convention of the control of producing iron in Wales, Scotland, etc., are also appendict to the report of the secretary of the treasury made December 3, 1849, as "L.-No.2t." To secure constructe the form of presentation has been altered and various verbal changes made. Any peculiarities of increason exclusion, or otherwise are part of the original.)

Elements of cost.	Cost
Cont of 1 ton of clav ironstone. Cont of 0 75 ton of conder Cont of 0 75 ton of red bematite ore from Whitehaven, at \$5.329 per ton Cont of 0 75 ton of red bematite ore from Whitehaven, at \$5.329 per ton Cont of 0 85 ton of coal for roking, at 36.9 cents per ton Cont of 0 85 ton of coal for the engine and hot biast, at 49.9 cents per ton Cont of 0.50 ton of limestone, at 72.7 cents per ton.	1.211 3.997 2.997 424 484 363
(leneral expenses	1.43

At Merthyr the above limestone costs about 36.3 cents per ton, but along the valley above Newport it costs \$1.09 per ton; 72.7 cents is given as the average. In some places they use the blast furnace cinder

for a flux instead of limestone because of the high price of the latter.

No account is taken of that, as the loss in the quality-of the iron is more than the gain by using the cinder.

As the price of the above hematite ore may be doubted by some per-

sons the items of cost are given as follows:

ANALYSIS OF COST OF ABOVE ORE.

. Elements of cost.	Cost
The price on board the vessel at Whitehaven, reduced in August, 1819, from \$2.96 per ton	\$2.00
Freight from Whitehaven to Cardiff	1.60
Cost at the furnace per ton	24 5. 32
COST OF MAKING ANTHRACITE PIG IRON IN WALES IN 1848.	
Cost of 2 tons clay ironstone, at \$2.422 per ton	\$1.84 2.90 2.42 1.81
Cost of 0.50 ton of limestons, at 72.7 cents per ton	. 36 2. 18 1. 45
Cost at the furnace per ton	17. 07
COST OF MAKING PIG IRON IN SCOTLAND IN 1848.	
Cost of 2 tons of raw coal, at 96.9 cents per ton Cost of 3.50 tous of raw ore (equal to 1.75 ton roasted), at \$1.211 per ton Cost of 0.3 ton of limestone, at \$1.695 per ton Cost of 1 ton of coal for engine and hot blast	\$1. 93 4. 23 . 50
Wages General expenses	1. 21 1. 3 7
Coet at the furnace per ton	9.78
	54 8 .
COST OF CONVERTING PIG IRON INTO [IRON] RAILS IN WALES IN 1	

Cost of 1.13 ton of pig iron, at \$14.714 per ton (see table above for coke pig iron in Wales) Cost of 0.50 ton of coke for fuel, at \$2.18 per ton Wages of refiner and helper	. 222
Cost of plate metal per ton	

COST FROM PLATE METAL TO PUDDLED BAR.

Cost of 1.06 ton of plate metal, at \$17.974 per ton	\$19. 0
that of 0.75 top of soal for muddling at 96.9 cents per top	.7
.04t Of U.33e top of comitor engines. Mt 48.5 cents her top	_1
Wages of puidler and helper	1.4
Wagen of aqueeser	
Wases for colling	
Wasse of autos tesis how at 52 5 cents our day	
Wages of 2 extra drag-out bors, at 23.2 cents each per day	
Wages of 1 cinder wheeler, at 50.5 cents per day	
Wages of ash fillers	
,	
Cost of puddled bar per ton	91

COST FROM PUDDLED BAR TO REHEATED AND ROLLED TOPS AND BOTTOMS

Elements of cost.	Cost.
Cost of 1.10 ton of puddled bar iron, at \$21.719 per ton Cost of 0.00 ton of coal for furnaces, at 96.9 cents per ton Cost of 0.33½ ton of coal for engine, at 48.5 cents per ton Wages for rolling Wages for heating	\$23, 891 .581 .162 .313 .414
Cost of rebeated and rolled tops and bottoms per ton	25. 361 22. 629

COST FROM RAIL PILE TO ROLLED AND FINISHED RAILS.

Cost of 1.10 ton of rail pile, at \$22.629 per ton	\$34. 89°
cet of 0.60 ton of coal for furnace, at 96.9 cents per ton	. 5R1
cat of 0.331 ton of coal for engine, at 48.5 cents per ton	. 16
Wages for cutting, wheeling, and piling	. 12
Wages of roller	. 10
Wages for roughing-down	.08
Wages for catching	.06
Wages of heater and helper.	.41
Wages of hooker-in, at 66.6 cents per day	. 02
Wages of heave-up at roughing, at 54.5 cents per day	.01
Wages of heave-up at finishing, at 36.3 cents per day	.01
Wages of catcher at finishing, at 48.5 cents per day	.01
Wages of extra helper to charge, at 60.5 cents per day	.02
Wages of extra helper to coach, at 60.5 cents per day	. 02
Wages of I sawer and hot straightener, at 66.6 cents per day	. 02
Wages of 3 sawers and hot straighteners, at 72.7 cents each per day	. 07
Wages of 1 sawer and hot straightener, at \$1.453 per day	.04
Wages of 2 hot filers, at 72.7 cents per day	.04
Wages of saw filer	. 01
Wages for cold straightening	. 20
Wages for dressing	.09
Wages for patching	. 02
Wages for inspecting	. 02
Heneral expenses, such as superintendence of mills, wages of engineers, firemen, masons,	1. 45
	1. 40
blacksmiths, cost of thebrick, oil, gresse, fuel for smiths, iron and steel to mend tongs,	
heaters' and puddlers' tools, sand, cinder, and ore to line and repair the furnaces, re-	
newal of castings burned and broken.	
Cost of completed rails at the mill per ton.	28.5

QUANTITIES OF MATERIALS USED IN MAKING ONE TON OF [IBON] RAILS IN WALES IN 1848.

[These quantities are deduced by the Department of Labor from the preceding statements as the necessary amounts entering into one ton of finished rails.]

. Materials. –	Tone.
Clay ironstone	1. 35 1. 35
Ked hematite ore	1. 01 4. 05 1. 14
Ameatone	. 67

QUANTITIES OF SUCCESSIVE PRODUCTS RESULTING FROM THE CONVERSION OF THE ABOVE MATERIALS INTO RAILS.

[Deduced by the Department, as indicated above.]

Pig from . Plate metal	1, 1951 1, 1278 2750
Plateted Palls	1. 0000

COST OF ROLLING-WILL LABOR IN ONE TON OF IRON [RAILS] IN THE UNITED STATES AND GREAT BRITAIN.

[This table is given substantially as it appears in the volume referred to, as it is impossible to make it harmonious with the preceding tables from which the various items of coet in the central column profess to be drawn. In the original some of these items could not be identified in the earlier tables, and ethers were manifestly wrong, though not enough so to alter the total materially. Under these circumstances, the only thing to do was to change the sterling into United States money, and present the table as it was found. Attention is also directed to the fact that the plan pursued does not really result in arriving at the total cost of direct labor in converting a quantity of pig iron into case to not really result in arriving at the total cost of direct labor in converting a quantity of pig iron into case to not really result in arriving at the total cost of direct labor in converting a quantity of pig iron into case not of realled iron. For example, the statement above the labor cost of pudding the material for a ton of rolled iron [rails] so that the true labor cost should be \$1.632. As to have the cost for American labor is arrived at, no information is furnished, and the value of the statement is thereby much lessened.]

		Great E	iritain.
Elements of labor.	United States, 1849.	1848	1849 (Reduced 10 per cent. from 1848).
Wages of puddler and helper Wages for rolling puddled bar Wages for sandry labor [puddle mill] Wages for absaring iron for ples Wages for heater and helper Wages for rolling Wages for straightening and finishing Wages for sundry labor General expenses, such as superintendence of mills, wages of engineers, firemen, masons, blacksmiths, etc.	. 727 . 823 . 210 . 875	\$1. 453 . 162 . 419 . 131 . 414 . 474 . 845 . 661 . 523	\$1. 296 . 145 . 375 . 110 . 370 . 419 . 436 . 655 . 669
Total	11.000	4.174	8.736

COST OF IMPORTING IRON UNDER THE TARIFF OF 1846.

[The charges are practically the average for 10 years of those actually paid by a large importing bouse.]

Elements of cost.	Cost.
Coet of 1 ton of rails at Merthyr, as shown above	\$28. 50°
Freight from Merthyr to Cardiff Commission for negotiating payment Shipping charges Daty	. 27 . 50 8. 25
Insurance Preight	. 41 8. 50
Total	42. 60

ANALYSIS OF COST OF IRON ORE IN ONE TON OF PIG IRON MADE AT FURNACES ON THE SCHUYLKILL RIVER, PENNSYLVANIA, IN 1849.

Elements of coet.		Cost.				
		Other.	Total.			
Mining 2.67 tons, at 81 per ton	\$2.67 1.33 .27	\$1.06	\$2.67 1.23 .27 1.06			
Total	4.27	1.06	8. 39			

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WEDDER OF

92 REPORT OF THE COMMISSIONER OF LABOR. ANALYSIS OF COST OF COAL IN ONE TON OF PIG IRON MADE AT FURNACES. ON THE SCHUYLKILL RIVER, PENNSYLVANIA, IN 1849.

		Cost	
Elements of cost.	Labor.	Other.	Total.
Mining 2.25 tons, at 90 conts per ton Lateral railroad transport of 2.25 tons, at 25 cents per ton (labor 12, other 12).	* \$2.02 .29	\$0.27	\$2.62 .56
Wear and tear in producing 2.25 tons, at 15 cents per ton (labor - 12, other 3). Incidental labor on 2.25 tons, at 7 cents per ton	. 27 . 16	.07	. 16
Railroad transport of 2.25 tons, at \$1.30 per ton (labor 70, other 60). Reyalty on 2.25 tons, at 35 cents per ton	1. 58	1.35 .79 .40	2.93 .79 .40 .11
Total	4. 82	2.99	7.31

ANALYSIS OF COST OF LIMESTONE IN ONE TON OF PIG IRON MADE AT FURNACES ON THE SCHUYLEILL RIVER, PENNSYLVANIA, IN 1849.

Quarrying 1 ton Hauling 1 ton Royalty on 1 ton	. 40	\$0. 10	\$0.25 .40 .10
Total	. 65	. 10	. 75

SUMMARY OF COST OF ONE TON OF PIG IRON AT FURNACES ON THE SCHUYLKILL RIVER, PENNSYLVANIA, IN 1849.

Iron ore, 2.67 tons. Coal, 2.25 tons. Limestone, 1 ton Conversion of these materials into 1 ton of pig iron. Other blast furnace expenses.	4.32 .65 2.00	\$1.06 2.99 .10	\$5. 33 7. 31 .75 2.00 2.11
Total	12.35	5. 15	17. 50

COST OF LABOR IN ONE TON OF MERCHANT BAR IRON AT THE WORKS ON THE SCHUYLKILL RIVER, PENNSYLVANIA, IN 1849.

[This iron is supposed to be made from the above analyzed pig iron, costing, as shown, \$17.50 at the mill. Three tons of coal, 3.55 tons of ore, and 1.33 ton of limestone are estimated as necessary to preduce the 1.33 ton of pig iron used in making 1 ton of this bar iron. The computations are made on these bases.]

Elements of coet.	Cost.
Mining 3 % tons of ore for the blast furnace, at \$1 per ton	\$3.56
Hauling 3.56 tions of ore for the blast furnace, at 50 cents per ton	1.78
Weighing, etc., 3.56 tons of ore for the blast furnace, at 10 cents per ton	. 36
Mining 3 tone of coal for the blast furnace, at 90 cents por ton	2. 70
Lateral railroad transport of 3 tons of coal for the blast furnace, at 13 cents per tou (labor proportion).	. 39
Wear and tear in producing 3 tons of coal for the blast furnace, at 12 cents per ton (labor proportion).	. 36
Incidental labor on 3 tons of coal for the blast furnace, at 7 cents per ton	. 21
Railroad transport of 3 tons of coal for the blast furnace, at 70 cents per ton (labor proportion).	2.10
Quarrying 1.33 ton of limestone for the blast furnace, at 25 cents per ton	. 23
Rauling 1.33 ton of limestone for the blast furnace, at 40 cents per ton	. 53
Blast furnace labor converting the materials into 1.33 ton of pig iron	4, 14
Mining 2.25 tons of coal for the bar mill, at 90 cents per ton	2.02
Lateral railroad transport of 2.25 tone of coal for the bar mill, at 13 cents per ton (labor proportion).	. 29
Wear and tear in producing 2.25 tons of coal for the bar mill, at 12 cents per ton (labor properties).	. 27
Incidental labor on 2.25 tons of coal for the bar mill, at 7 cents per ton	. 16
Refired transport of 2.25 tons of coal for the bar mill, at 70 cents per ton (labor proper-	1. 80
tion), plus error of 22 cents.	
Bor-mill labor converting 1.23 ton of pig from into 1 ton of merchant bar from	15,00
Estra her-mill labor	1.00
-	
Total	37. 00

COST OF ANTHRACITE PIG IRON AT A FURNACE IN EASTERN PENNSYLVANIA.

[From Report of Tenth Census, Vol. XX, page 111, where it is given as compiled by William E. S. Baker for The Iron Age.]

					-			
Items.	1880.	1879.	1879, Jan. 1.	1877, July 1.	1876, Mar. 1	1875, Mar. 1.	1874, Mar. L	1873,
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron	\$11.49 5.78	\$9.97 5.14	\$6.51 5.29 .78	\$7.69 4.93	\$9.54 6.79	8. 01	7.90	\$11.8
Cost of limestone to the ton of pig iron. Cost of [furnace] labor to the ton	1. 23 2. 80	2.35	1.86	2.02	1. 01 2. 54	10.5.22	2.03	- 5.1
of pig iron. Cost of general contingencies(a)	1.40-	.96	1. 29	1.65	1.73	2, 10	2, 39	-3.0
Cost at furnace bank	22, 70 1, 00	19. 51 1. 00	15. 78 1. 15	17. 10 1. 26	21.61 1.50	26. 17 1. 70	31. 47 2. 00	32.4 2.0
Total cost to producer	23, 70	20, 51	16.88	18.36	23. 20	27. 87	23. 47	84.4
Items.	1872.	1871.	1870.	1869.	1868.	1867.	1866.	1865.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron. Cost of limestone to the ton of pig iron.	\$13. 64 7. 28 2. 04	\$12. 67 8. 59 2. 08	\$12.96 • 7.08 2.44	\$11.86 7.41 2.14	\$10. 92 7. 11 2. 51	\$11.71 7.44 2.76	\$12.19 7.56 2.65	\$13. 1 9. 6 2. 8
Cost of [furnace] labor to the ton of pig iron.	4.60	3.54	8.89	3.46	3.86	3.90	1	4.1
Cost of general contingencies (s)	2. 93	2.77	8, 67	1. 96	1.90	1.98	2.03	2.0
Coet at furnace bank	30, 58 1, 75	29. 65 1. 82	30. 04 1. 85	26. 83 1. 71	26. 30 1. 63	27. 88 1. 80	27. 88 1. 64	82.5 1.0
Total cost to producer	82. 33	31. 47	81. 89	28. 54	27. 93	29. 68	29. 52	83, 8
Items.	1864.	1863.	1862.	1861.	1860.	1860.	1858.	1857.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron Cost of limestone to the ton of pig iron.	\$9. 12 5. 41 1. 98	\$7.49 3.42 1.20	\$7.08 3.68 1.11	\$7.35 3.26 1.17	\$7.45 8.40 1.21	3, 26	\$7.66 4.06 1.18	\$7. 3. 1.
Coet of [furnace] labor to the ton of pig iron.	2, 85	2.07	1. 57	1.97	1. 87	1.82	2. 10	2.
Cost of general contingencies (a)	1, 66	2. 35	2.67	2.86	2. 83		2.78	2.
Cost at furnace bank	20. 97 1. 59	16. 53 1. 40	16. 11 1. 57	16. 61 1. 57	16. 85 1. 36	16. 14 1. 28	17.78 L 23	17.
Total cost to producer	22. 56	17. 93	17.68	13. 18	18. 21	17. 42	18.96	18.
Items.	1856.	185	5. 18	54. 1	853.	1862.	1851.	1850.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron Cost of limestone to the ton of pig iron.	. 8.9	0 4.	.63	5. 65 L 53 L 36	5. 97 2. 23 1. 06	\$5. 55 3. 65 1. 09	\$5. 44 8. 36 . 96	\$5. 2.
Cost of [furnace] labor to the ton of pig iron.	2,5	8 2.	. 85 2	L 45	2.00	2.03	1.61	2.5
Cost of general contingencies (a)	2.9	1 2	.62	. 99	2. 62	2. 03	1. 93	1.
Cost at furnace bank	. 18.0				14. 88 1. 23	14.34	13.30 1.05	14.
Add interest on capital on a prod- not of 6,000 tons.	1.2	1 1.	29 1	1. 87	*		-:	

s Presumably this relates to the blast furnace only.

Fevenner. 1385. Mr. Henry S. Eckert, president of the Eastern Fig. from association, and Mr. De B. Randolph Keim, secretary, in removing for the association to a letter of the honorable secretary of the masury sent at a September. 1385, stated (a) that during the three pears and mast the lost of production of pig iron had varied from \$11.75 and her ton of 1240 pounds. This letter also contains the following minimable statements:

stor more.—The actual cost of furnace labor, including handling magerials and product, with superintendence, at a well managed furnace with average 32 to 32.50 per ton of iron. Taking \$2 as a standard, he leads would be mout as follows:

Resonance to the contract of t	\$0,30
Their was "THEY THE THEY.	.30
res - 1,12g materials did farades	.70
The time technical cast and intuiting true.	. 20
- 25-26 - т асадин. 25, привешен, .а эогета, еtc.)	. 50
	~ ~~

The recent congress range from 11 cents per hour for unskilled labor and 2000 per tay for skilled mechanics.

The principal item of operating expenses is the control of the principal item of operating expenses is the control of the principal items are incidentals and repairs. Incidentals and items are incidentals and repairs. Incidentals and items are incidentals and repairs. Incidentals and items are also as well are successed on the control of the control

energy apony to large items, always required when an one a mace goes out of blast at the close of the machinery stationary necessary at the end of a blast, which has be sarred up again. The amount of repairs machiner, and has never be determined till the furnace of about of inspection. Then the length of the means to fear or rive years, and of course the machiner than the repairs are chargeable varies with the first reasons to the repairs are chargeable varies with the machiner reasons the amount per ton due to the machiner while the furnace is in blast, but the series with the series with the series with the series with the series with the first reasons the first reasons the first reasons the series with the first reasons the series with the series with the series with the first reasons the series with

to externally a request for itemized expendition on the actual cost of making pig iron at 4 the country east of the Alleghany mountains, the country east of the districts where the country east the years 1882, 1883, and 1884:

٠		" and a second	A Pain Pari	lucidentals.	Repairs.	Total cost.
*	ų.	* (£ 25	\$0.43		\$17.30
	*	- 3	: <	.73	\$0.69	18.70
		~	7.1	. 62	. 19	18. 95
	٠	*	7 %	L IJ	.50	20. 16

agency of the second office, commissions, interest, taxes,

the tariff, February or the revision of the tariff, February

PART I .- COST OF PRODUCTION.

While it will be seen that the direct charge for labor at the furnace ranges from \$1.82 to \$2.37 per ton of iron, it must be emphatically stated that the other items—fuel, ore, limestone, and repairs—are very largely, perhaps \$0 per cent., made up of labor.

Messrs. J. B. Sargent, of New Haven, Conn., Edward J. Shriver, of New York, Graham McAdam, of New York, Lindley Vinton, of the Vinton Iron Works, Indianapolis, M. D. Harter, of the Aultman & Taylor Company, Mansfield, Ohio, John H. Miller, of the Schreidt & Miller Company, Mansfield, Ohio, Isaac H. Harter, of the Peerless Reaper Company, Canton, Ohio, W. G. Gibbons, of Wilmington, Del., and others, in a letter to the honorable secretary of the treasury, dated December 21, 1885, (a) made the following statements relative to the cost of converting pig iron into bars and rails in America and in England, the statements being for the latter part of 1885:

COST PER TON OF MAKING BAR IRON AND STEEL RAILS.

	In America.	In England.
Medium bar iron sells at	\$35, 84 15, 00	\$29. 10 11. 64
Converting pig iron into bars	20. 84	17.48
Steel rails sell at Bessen : priron sells at	84. 00 20. 50	24. 50 10. 29
Converting pig frourmto rails	13.50	14.30

The English quotations used in the foregoing statement are for South Staffordshire bar of the quality usually marketed in this country along-side our medium bar, and for pig of corresponding quality. The gentlemen above referred to, in their letter to the honorable secretary, criticised the following table given by the Iron and Steel Association.

Labor in transporting raw materials. Labor at furnace, including repairs.	1.78
Total cost of labor. Taxes, insurance, commissions, office expenses, interest, travelling expenses, royalties, etc.	13. 95 5. 22
Total cost of ton of pig iron	19. 17 73

Reviewing this statement, they say:

The effort here is to sustain the theory that pig iron is all labor, but nothing can excuse such a deliberate perversion of fact as is contained in these few figures. According to the census of 1880 when wages were much higher the actual wages paid for mining this ore were \$2.81 and for the coal \$1.22. Adding 40 cents wages paid for quarrying limestone we get the total labor for producing raw material as \$4.43 to one ton of pig iron instead of \$10.26 as in the table.

Quoting a statement from the Iron Age that one-half cent per mile is a fair allowance for transportation they say:

If this estimate is correct, the labor for transporting raw material

a See report of the secretary of the treasury on the revision of the tariff, February 16, 1836, pages 521 to 530.

REPORT OF THE COMMISSIONER OF LABOR.

ought not to be put down at over 40 cents in most cases. The item of labor at furnace is fairly reasonable, but an allowance of \$5.22, or 25 per cent., for et ceteras would indicate a most extravagant business, and is \$2 more than the highest estimate that has ever been made. Remodelling our table by the new light-we have found, it will read (taking economic cost in the country at large) as follows:

Labor of mining iron ore	1, 22
Labor in transportation	. 40
Total labor	6. 74 3. 00
Actual economic cost	9.74
Or, bringing et ceteras up to the association's statement	11.96
To get the association's result we are obliged to add:	
Royalties on ore and profit of ore mining companies	1. 29 . 35
Total cost	19. 17 351 71

The cost of making pig iron at Middlesboro, England, where free competition has forced on mining companies moderate profits, averages \$8.81 per ton, of which \$7.17 is represented by the raw material used, no that it is plain that the higher cost in this country is caused almost wholly by the rack rent paid to mine owners and to railroads carrying raw materials, and that these two classes are the real beneficiaries of the excessive tariff that, starting with pig as a basis, raises the values of iron and steel products to so high a level that we are shut out from the trade of the world. If, to the actual labor paid for mining the raw material, as given positively by the census—\$1.35 per ton of ore, which the statistics of Mr. Swank tell us averages 55 per cent. metallic iron, and 70 cents per ton of coal, of which 11 tons are used to smelt a ton of pig—and to the labor of transportation, as estimated by the protection-int Iron Age, we add a profit of 20 per cent., the expenses at the furmuon itself, and the sundry charges, we find that the real cost of the pig will vary from \$10.50 to \$13, according as the business is conducted under economic management and with improved plant, or the reverse. This exactly agrees with what is known of the cost of producing by much companies as the Thomas, Colebrook, or Cornwall, of Pennsylva-nia, which mine their own ore, but buy and transport coal at high tariff rutes; by the Virginia furnaces, which buy ore comparatively cheap, linguisme there are few of them in relation to the neighboring supply of raw material, and by the furnaces in Alabama and Tennessee, which have the advantage of ore and coal lying side by side, as well as that of being as yet in a position to dictate terms to the land barons who awn the mines, even where they must buy their material, instent of digging it on their own property. Both conditions of ownership of mines and proximity of fuel to ore are combined in the case of certain Intumous in the Hocking Valley, Ohio, which it is now said can make INHH NO W GONT OF \$10 W TOD!

The foregoing statements are brought in here simply to show the difficulty of securing cost of production, when the producers of pig iron, even, cannot agree. The advantage which the Department has had over the parties who made the statements just quoted and the Iron and Steel Association is that the agents of the Department have made up the statements used by it from the books of account, without any desire to reach any other conclusion than that of the exact truth, independent of estimates of individual men. The desire in the statements quoted has no doubt been to reach the truth, but the parties have been obliged to depend in too many instances upon estimates rather than upon actual statements from accounts.

PRODUCTION OF RUN OF FURNACE PIG IRON (BESSEMER AND FOUNDERY) AT A WELL KNOWN ESTABLISHMENT IN GREAT BRITAIN.

[This report is not included in the general tables, page 25, st seq., as it lacks certain features essential in those presentations, notably the aggregates of production for a fixed period. In other respects its fullness is such as to make it valuable. The figures are based on prices prevailing in 1887, and probably would, for 1889, be 10 per cent. higher for all wages paid. The original does not present such an appearance of minute specification in costs. The sums are there given in even pence, shillings, or pounds, and the appearance of extreme exactness is produced by the conversion into United States money. It is a large establishment.]

Concluded.

```
Height: From 40 to 60 feet.
Greatest diameter: From 15 to 18 feet.
      Cubic contents: From 4,120 to 8,780 cubic
         feet.
      Open or closed top: Closed. Fore hearth or closed front: Both.
Blowing engines:
Number: Four
      Diameter of blowing cylinders: From 81 to
         120 inches.
     Length of stroke: From 7 to 92 feet.
am boilers, etc.:
Number: Twenty-three.
      Number: Twenty-three.
Length: From 24 to 30 feet
      Diameter: From 65 to 9 feet.
Total heating surface: 14,112 square feet.
Kind of hoists used: Vertical.
Power used to operate hoists: Steam and
      water balance.

Kind of hot blast apparatus: Pipe stoves.

Number of hot blast apparatus: Two per
      Extent of use of water power: For one hoist
      Fuel for blowing engine boilers and hot blast apparatus: Furnace gases wholly.
      Kind: Raw coal.
      Source of supply: Furnace's own mines.
Miles distance from works: 5.
Means of transport: Railway.
Proportion mined by owners of the furnaces:
      Nearly all.
Proportion bought: Trifling.
Royalty paid to state: Nothing.
Royalty paid to owners of soil: About 14.2
      cants per ton.

Quantity used per ton of product: 4,256 pounds.
      Labor cost of mining per ton: 97.3 cents.
Total cost per ton including waste: $1.46.
      Kind: Blackband, clayband, and hematite.
      Location of blackband and clayband mines:
10 to 20 miles from furnaces.
      Location of hematite mines: North of Eng-
```

Means of transport: Rail and sea.

Proportion mined by owners of the furnaces:

Proportion bought: 20 per cent.
Maximum size after breaking: 8 inches.
Boyalty paid to state: Nothing. yaity paid to owners of soil for clayband:

land and Spain.

per cent

14.2 cents per ton. H. Ex. 265

B-Concluded.
Royalty paid to owners of soil for blackband:
48.7 cents per ton.
Royalty paid to owners of soil for hematite:
48.7 cents per ton.
Proportions charged for foundery iron: i clay-band, i hematite, blackband.
Proportions charged for Beesemer iron: i English, i Spanish.
Ore roasted: Clayband.
Coal for roasting per ton of cre: 28 pounds.
Quantity used per ton of product: 4,032 pounds.
Labor coast per ton of mining blackband: \$2.19.
Labor coast per ton of mining blackband: \$1.67. Labor cost per ton of mining hematite: \$1.975.
Total cost per ton including waste: \$3.59.
Pure limestone: Source of supply: Furnace's own mines.

Average distance from quarries to works: 24 miles Means of transport: Railway.

Proportion quarried by owners of furnaces:

All. All
Proportion bought: None.
Maximum size after breaking: 6 inches.
Royalty paid to state: Nothing.
Royalty paid to owners of soil: 8.1 cts. per ton.
Quantity used per ton of product: 734 pounds.
Labor cost per ton of quarrying: 48.7 cents.
Total cost per ton including waste: \$1.213. Labor cost per ton of quarrying: 48.7 cents.
Total cost per ton including waste: \$1.213.
Concerning workmen:
Masons: 1, at \$7.54, weekly.
Carpenters: 8, at \$4.87 to \$5.84, weekly.
Smiths: 7, at \$4.87 to \$5.84, weekly.
Machinists: 9, at \$5.35 to \$6.33, weekly.
Patternmakers: 2, at \$5.30 to \$6.33, weekly.
Moulders: 12, at \$4.30 to \$5.84, weekly.
At blowing engines: 97.2 cents per shift.
At locomotives: 79.1 cents per shift.
At locomotives: 79.1 cents to \$1.034 per shift.
Boiler meuders: 91.2 cents per shift.
Boiler meuders: 91.2 cents per shift.
Engineers: 97.3 cents per day.
Founders: 97.3 cents per day.
Keepers: 93.3 cents per day. Founders: 97.3 cents per day.
Keepors: 93.2 cents per day.
Helpers: 71 cents per day.
Fillers: 81.1 cents per day.
Laborers: 54.7 cents per day.
Men and carts moving material from unloading place to furnace: None; fillers charge railroad cars with barrows.
Ore breakers: Two. Limestone breakers: None; broken by machine at mine.

COST FROM PUDDLED BAR TO REHEATED AND ROLLED TOPS AND BOTTOMS.

Elements of cost.	Cost.
Cost of 1.10 ton of puddled bar iron, at \$21.719 per ton Cost of 0.00 ton of coal for furnaces, at 96.9 cents per ton Cost of 0.33½ ton of coal for engine, at 48.5 cents per ton Wages for rolling Wages for heating	\$23.891 .581 162 .313 .414
Cost of reheated and rolled tops and bottoms per ton	25. 361 22. 629

COST FROM RAIL PILE TO ROLLED AND FINISHED RAILS.

Cost of 1.10 ton of rail pile, at \$22.629 per ton	\$34. 89°
Cost of 0.00 ton of coal for furnace, at 96.9 cents per ton	. 5R
Coat of 0.331 ton of coal for engine, at 48.5 cents per tou	. 16
Wages for cutting, wheeling, and piling	. 12
Wages of roller	. 10
Wages for roughing-down	. 08
Wages for catching	.06
Wages of heater and helper	.41
Wages of hooker-in, at 6d.6 cents per day	. 02
Wages of heave-up at roughing, at 54.5 ceuts per day	. 01
Wages of heave-up at finishing, at 36.3 cents per day	.01
Wages of catcher at finishing, at 48.5 cents per day	. ŏi
Vages of extra helper to charge, at 60.5 cents per day	. 0:
Vages of extra helper to coach, at 60.5 cents per day	. 6
Vages of 1 sawer and hot straightener, at 68.6 cents per day	. 0
Wages of 8 sawers and hot straighteners, at 72.7 cents each per day	.07
Wages of 1 sawer and hot straightener, at \$1.453 per day	.04
Wages of 2 hot filers, at 72.7 cents per day	.04
Varies of any flor	.01
Wages of saw filer	. 20
Wages for Ook Straightening	.09
Wages for dressing	
Wages for patching	. 02
Wages for fuspecting	. 02
denoral expenses, such as superintendence of mills, wages of engineers, firemen, masons,	1.40
blacksmiths, cost of firebrick, oil, grease, fuel for smiths, iron and steel to mend tongs,	
heaters' and puddlers' tools, sand, cinder, and ore to line and repair the furnaces, re-	
newal of castings burned and broken.	
	28.5
Cost of completed rails at the mill per ton	28. 0
ı	

QUANTITIES OF MATERIALS USED IN MAKING ONE TON OF [IEON] RAILS IN WALES IN 1848.

[These quantities are deduced by the Department of Labor from the preceding statements as the necessary amounts entering into one ton of finished rails.]

	Materials.	-	Tone.
Cinder	last.		1. 350 1. 012 4. 051 1. 147

QUANTITIES OF SUCCESSIVE PRODUCTS RESULTING FROM THE CONVERSION OF THE ABOVE MATERIALS INTO RAILS.

[Deduced by the Department, as indicated above.]

Pig iron	1. 2504 1. 1951 1. 1275 . 2750 1. 1000 1. 0000
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COST OF ROLLING-MILL LABOR IN ONE TON OF IRON [RAILS] IN THE UNITED STATES AND GREAT BRITAIN.

[This table is given substantially as it appears in the volume referred to, as it is impossible to make it harmonious with the preceding tables from which the various items of cost in the central column profess to be drawn. In the original some of these items could not be identified in the earlier tables, and others were manifestly wrong, though not enough so to alter the total materially. Under these circumstances, the only thing to do was to change the sterling into United States money, and present the table as it was found. Attention is also directed to the fact that the plan pursued does not really result in arriving at the total cost of direct labor in converting a quantity of pig iron into one ton of rolled iron. For example, the statement shows the labor cost of puddling the material for a ton of rolled iron [rails] to be \$1.453, but a reference to the preceding tables shows that this sum is the labor cost of puddling in one ton of puddled iron; now it requires 1.1275 ton of puddled iron to produce a ton of rolled iron [rails] so that the true labor cost should be \$1.638. As to how the cost for American labor is arrived at, no information is furnished, and the value of the statement is thereby much lessened.]

	()	Great Britain.	
Elements of labor.	United States, 1849.	1848-	1849 (Reduced 10 per cent. from 1848).
Wages of puddler and helper Wages for rolling puddled bar. Wages for sundry labor [puddle mill] Wages for shearing irvn for piles Wages for heater and helper Wages for rolling Wages for straightening and finishing Wages for sundry labor General expenses, such as superintendence of mills, wages of engineers, firemen, masons, blackamiths, etc.	210	\$1. 453 .162 .419 .121 .414 .474 .545 .061 .523	\$1. 295 . 145 . 375 . 110 . 370 . 420 . 485 . 055
Total	11.000	4.174	2.794

COST OF IMPORTING IRON UNDER THE TARIFF OF 1846.

[The charges are practically the average for 10 years of those actually paid by a large importing house.]

Elements of cost.	Cost.
Cost of 1 ton of rails at Merthyr, as shown above	\$28. 50 . 60
reight from Merthyr to Cardiff Commission for negotiating payment hipping charges Duty	. 27 . 56 8. 29
reight	8.5
Portage	42.6

ANALYSIS OF COST OF IRON ORE IN ONE TON OF PIG IRON MADE AT FURNACES ON THE SCHUYLKILL RIVER, PENNSYLVANIA, IN 1849.

-		Cost.		
Elements of cost.	Labor.	Other.	Total.	
Mining 2.67 tons, at \$1 per ton.: Hauling 2.67 tons, at 50 cents per ton Weighing, etc., 2.67 tons, at 10 cents per ton Royalty on 2.67 tons, at 40 cents per ton	\$2.67 1.33 .27	\$1,06	\$2.67 1.23 .27	
Total	4. 27	1.06	5. 39	



TO THE

American four presincers are not suspected in government royalties upon find when he was a find the companions along and where they have to my fryundes to the fourier of the manustary are not subjected to men my find the fourier for the manustary and the question of fryundes, head means and way easies. In William Barrow Turner, a pentiamon accept interested in the fourier of Paritims and the manustary interested in the first with the price of Paritims at the manustary of Turner, and the manustary of Turner, and the manustary of Turner, and the manustary of Turner, and the manustary of Turner, and the manustary of Paritims and the manustary of the manustary of the first manustary of the first manustary of the first manustary of the first means of the Barrow Hematite from and Steel Turner, sometime to the summission as follows:

I would like to point out with reference to the shiing scale commencing with a smilings made up to D smilings madeignth of the selling price is paid; when D smilings it is a seventh and a half of a seventh; that is to say, it is half per come; when it is D smilings it is one-fifth, or D per cone; and when it goes to D smilings, it is one-fourth, or 25 per cone. See that men a lesson reconvex 15 per cone of the selling price of the rea.

The Coiliery Guardian, of London, in specifing of these royalties, says that the landlord's royalty on 400 rous of pay from produced in one week amounted to 202 pounds specifing, while the wages of the employes on the same quantity of pay from were 35 pounds sterling, and that a Curari steamship, on a trip werest the Atlantic and back, consumed \$125 tons of coal, which involved a royalty to the mine of £206 5s.

These excessive royalties result in a constant agitation among the tron producers of Great Britain, and as the royalties vary in different places they are a disturbing element in arriving at true cost of production [4].

4 BOYALTIES IN DIFFERENT COUNTRIES.

Numptied with some abbreviation from the Annual for 1801 of the Co-operative Wholesale Societies of England and Scotland.

"wired State.—In the United States minerals belong to the owner of the soil and mineral lands are subject to the same taxation as other lands, but no government toyalties are levied; royalties, however, may be paid to the owner by those working mines.

Medical.—In England the land owner does not, as a rule, work the minerals in his cetate; he leases the right of mining to others, reserving certain royalties or money payments. The length of lease, amount of royalties, and conditions imposed on the lease vary in different localities, but all payments are usually proportionate to the amount of minerals obtained. The modern practice of levying a royalty for every than of our obtained, instead of per acreage, was introduced very gradually.

amount of minerals obtained. The modern practice of levying a royalty for every two of one obtained, instead of per acreage, was introduced very gradually.

In England there are several taxes or payments which must be made where mines are not worked by the owner, but by lessees. They are: (a) Royalties, which are payments made to a land owner for permission to enter on his lands and take away payment one, such payment depending on the amount of ore worked. The amount of one is calculated by the ton, as in Northumberland, or by the foot or by the acre, as in Yorkshire. (b) Dead rents. The sum agreed upon must be paid whether the mine be worked or not. In order to secure the due working of the mine, the land a water inserts in the lease a condition that he is in each year to receive not less than a water is sem in royalties; and this sum must be paid whether the mine be worked

COST OF ANTHRACITE PIG IRON AT A FURNACE IN EASTERN PENNSYLVANIA.

[From Report of Tenth Census, Vol. XX, page 111, where it is given as compiled by William E. S. Baker for The Iron Age.]

Items.	1880.	1879.	1879, Jan. 1.	1877, July 1.	1876, Mar. 1.	1875, Mar. 1.	1874, Mar. 1.	1873.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron:. Cost of limestone to the ton of pig	\$11.49 5.78 1.23	\$9.97 5.14 1.09	\$6.51 5.29 .78	\$7.69 4.93 .81	\$9.54 6.79 1.01	\$11.95 8.01 1.14	\$14.75 7.90 2.03	\$14.8 7.4: 1.9:
Cost of [furnace] labor to the ton of pig iron.	2. 80	2.35	1.86	2.02	2, 54	2,97	4. 40	- 5.1
Cost of general centingencies (s)	L 40	.95	1. 29	1. 65	1.73	2, 10	2.39	8.0
Cost at furnace bank Add interest on capital on a prod- not of 6,000 tons.	22, 70 1, 00	19. 51 1. 00	15. 78 1. 15	17. 10 1. 26		26. 17 1. 70	31.47 2.00	32.4 2.0
Total coet to producer	23.70	20, 51	16.88	18.36	23. 20	27. 87	83. 47	34.4
· Items.	1872.	187L	1870.	1869.	1868.	1867.	1866.	1865.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron. Cost of limestone to the ton of pig iron.	\$13. 64 7. 28 2. 04	\$12. 67 8. 59 2. 06	\$12.96 • 7.08 2.44	\$11.86 7.41 2.14	\$10. 92 7. 11 2. 51	\$11.71 7.44 2.76	\$12.19 7.56 2.65	\$13. 11 9. 60 2. 81
Cost of [furnace] labor to the ton of pig iron.	4.69	3.54	8. 89	2.46	3. 86	3.90_	3.46	4.50
Cost of general contingencies (a)	2.98	2.77	2.67	1. 96	1.90	1.96	2.03	2.0
Cost at furnace bank	30. 58 1. 75	29. 65 1. 82	30. 04 1. 85	26. 83 1. 71	26. 30 1. 63	27. 88 1. 80	27. 88 1. 64	22.2 1.6
Total cost to producer	82. 33	31. 47	81. 89	28. 54	27. 93	29. 68	29. 52	83. 8
Items.	1864.	1863.	1862.	1861.	1860.	1850.	1858.	1857.
Cost of ore to the ton of pig iron Cost of coal to the ton of pig iron Cost of limestone to the ton of pig	\$9.12 5.41 1.98	\$7.49 3.42 1.20	\$7. 08 3. 68 1. 11	\$7.35 3.26 1.17	\$7.45 3.49 1.21	\$7. 08 3. 26 1. 15	\$7.66 4.06 1.18	\$7.7 3.8 1.1
iron. Cost of [furnace] labor to the ton of pig iron.	2, 85	2.07	1.57	1.97	1.87	1. 82	2. 10	2.3
Cost of general contingencies (a)	1.66	2. 35	2.67	2.86	2.83	2.83	2. 73	2.1
Cost at furnace bank Add interest on capital on a product of 6,000 tons.	20. 97 1. 59	16. 53 1. 40	16. 11 1. 57	16.61 1.57	16. 85 1. 36	16, 14 1, 28	17. 73 L 22	17. 2 L 4
Total cost to producer	22. 56	17. 93	17.68	18. 18	18, 21	17. 42	18. 95	18.7
Items.	1856	. 185	5. 18	54. T	853.	1862.	1851.	1850.
Coat of ore to the ton of pig iron Cost of coal to the ton of pig iron Cost of limestone to the ton of pig	. 8.1	0 4.	68 8	1. 65 1. 53 1. 88	15. 97 2. 23 1. 06	\$5. 55 3. 65 1. 09	\$5. 44 8. 36 . 96	\$5.7 8.7
iron. Seet of [furnace] labor to the ton		1	i	2.45	2.00	2.03	1. 61	2. 2
of pig fron. Cost of general contingencies (a)	. 2.1	n 2	.62 1	. 99	2. 63	2.03	1. 93	' 1
Cost at furnace bank	18.0			3.00	14. 88 1. 23	14. 34 1. 15	13.30 1.05	14.2
TICE OF GLADA SOTTE.								

s Presumably this relates to the blast furnace only.

the average monthly prices per ton of 2,240 pounds of pig iron in Pennsylvania, from 1887 to 1890, inclusive, and the prices per ton of 2,240 pounds of No. 1 anthracite foundery pig iron at Philadelphia since 1842. These are drawn from the valuable reports of Hon. James M. Swank,

other Aveyron districts it is much less. In the case of fixed payments, the amount varies from \(\frac{1}{4} \)d. to \(\frac{1}{4} \)d. per acre, though in exceptional cases they are much higher.

Apart from payments to the surface owner, the following payments have to be

made to the state:

(1) A yearly rent of 10d. per square kilometre, a kilometre being equivalent to 1,093 yards.

(2) A fixed annual rent of 5 per cent. on the net produce of the mine.
(3) One penny additional for every 10d. paid, in order to form a relief fund for

those injured by accident in mines.

Sir Isaac Lothian Bell considers that 5 per cent. on the net produce is equivalent to a royalty of about 11d. per ton. If, however, the concessionaire, instead of working the mine himself lets it out to others, his position is that of an English landlord, and the lessee, in addition to the above payments, will have to pay a competitive rent to the concessionaire.

Belgium.—In Belgium the mining law is based on the French legislation. person who acquires a right of mining is required to pay to the state the following

taxes:

A fixed tax of 10d. per annum for each square kilometre of the area granted.
 A tax of 2½ per cent. of the net produce.
 A small additional percentage on the above two taxes towards the expenses of

Spain.—In Spain any person may apply to the governor of a province for permission to work minerals in a specified plot of ground. The application is advertised, and if there is no opposition the grant will be made of the right of mining in permission.

The splitting appeared to the grant is that the granteewill pay a surand if there is no opposition the grant will be made of the right of mining in perpetuity. The sole condition annexed to the grant is that the grantee will pay a surface rent equivalent to is. 5d. per acre for ironatone and 3s. 6d. per acre for other minerals, and 1 per cent. on the gross production of the mine. The grantee, however, does not, as a rule, work the minerals himself; he sells his right, or he leases it at a royalty per ton. The grantee, in fact, takes the position of the landlord in England, and exacts as high a royalty as he can obtain. In old leases the royalty varies from 8d. to 2s. per ton, and at present the royalty is sometimes as high as 3s. 6d. per ton on one that is worth 10s. per ton f. o. b. It may be added that Spain reserves the right of granting a title to minerals apart from the surface, not only as regards coal and iron but also as regards such anatance as a subalt with hitumer, and netroand iron, but also as regards such substances as asphalt, pitch, bitumen, and petro-leum; whilst all minerals of an earthy nature, such as alate, limestone, marls, etc., are granted to the owner of the surface.

Germany.—In Prussia no royalties are levied by the state on iron mines; all other mines, as a rule, pay 2 per cent. on the value of the produce at the time of output. All mines, however, must contribute to the miners' benefit fund, which provides assistance to miners in the case of illness or accident. The owner of the mine must also compensate the surface owner for any damage he causes to the surface. But, apart from these minor payments, all iron mines granted by the state are free from royalroun these minor payments, all from mines granted by the state are free from royal-ties, whilst coal and other mines pay the above 2 per cent. Sir Lothian Bell regards this 2 per cent as equivalent to a royalty of 14d. per ton on coal sold at 6s. per ton. There are, however, private mines in Prussis, and the owners of such mines obtain the best rent they can for the privilege of working. As a rule the royalty is one-tenth of the gross produce, but of late years the difficulty of competing with mines that only pay 2 per cent. of their produce has had the result of reducing the royalties in private mines. Private mines are liable to contribute to the state I per cent. towards the expenses of the mining department of the government.

Austria.—In Austria all minerals are reserved to the state. Any person can obtain a permit to search for minerals in a specified area, and if minerals are found one or more "free diggings" may be obtained. If the miner can come to terms with the proprietor of the surface land, arbitrators are appointed to fix the price to be paid. For each digging of 424 metres diameter the miner pays an annual tax of about 6s. 8d. For the actual working of each mine of 3,597 square metres, 4 florins have also to be paid.

Sweden and Norway.—In Sweden a right to minerals can only be acquired from the

state, and the small fixed sum of 10s. 10d is paid when the grant is made. No royalty is exacted, and the only tax paid is the ordinary income tax.

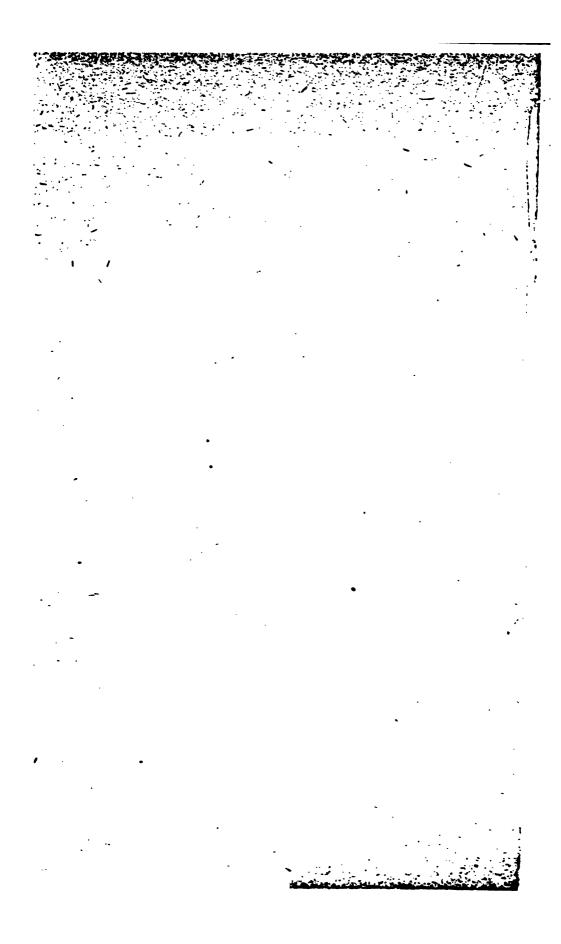
In Norway similar rules prevail, but the owner of the ground may claim one-tenth share in a mine on his property. No tax is paid for the right of mining, except in the case of alluvial gold.

The following statement and table relative to the prices of lake Superior iron ore are taken from the report of the American Iron and Steel Association, prepared by Hon. James M. Swank, secretary.

The subjoined table gives the prices at which lake Superior iron ore has been sold during the last seven years for season contracts, delivered at Cleveland, contracts having been made early in the year, except in 1888, when season prices were not fixed until May. It will be noticed that prices for 1890 are much higher than for 1888 or 1889. To furnace owners who were compelled to purchase ore in the last two or three months of 1889 prices were higher than the figures given in the table, but with the exceptions mentioned contracts for 1889 were made substantially at the quoted figures; indeed it is said that a majority of the contracts for 1890 were made in December, 1889. Prices for 1888 fluctuated above and below the figures given in the table, and in 1887 the spring prices given in the table were not maintained throughout the year. The prices given are per ton of 2,240 pounds.

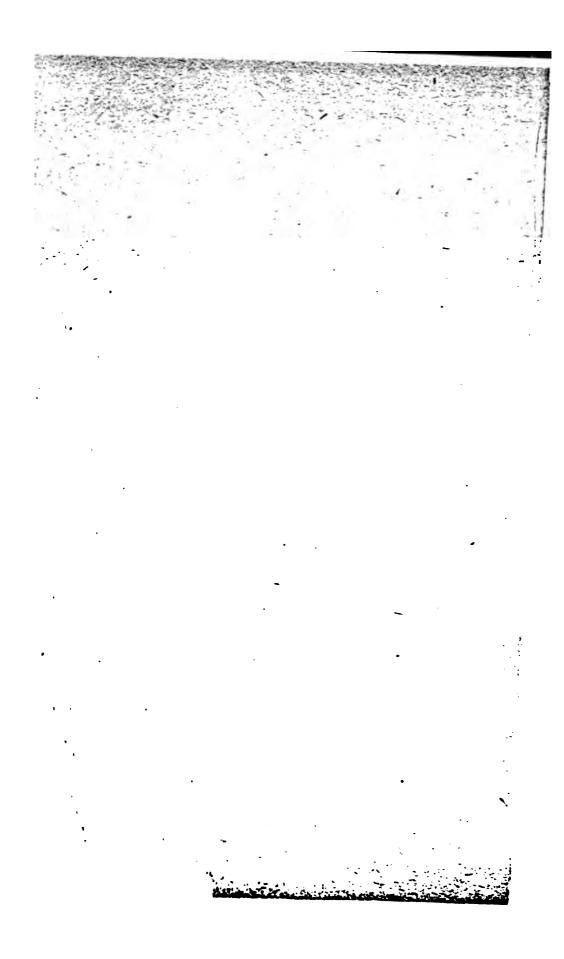
PRICES OF LAKE SUPERIOR IRON ORE.

Orea.	1884.	1885.	1886.	1887.	1888.	1889.	. 1890.
Republic and Champion No. 1 Barnum. Cleveland, and lake Superior specular No. 1. Chapin and Menominee No. 1. Vermilion district, No. 1 Bessemer	\$6.00 5.75 5.25 4.75	\$5.75 5.00 4.75 5.00	\$6. 25 5. 50 5. 25 5. 75	\$7.00 6.50 6.00 6.75	\$5. 75 5. 25 4. 75 5. 75	\$5, 50 5, 00 4, 50 5, 50	\$6.50 6.00 5.50 6.50
Gogebic district, first quality Bessemer Hematites No. 1, non-Bessemer		4.00	5, 00 4, 50	6. 00 5. 00	4. 73 4. 00	5, 00 3. 75	6. 00 4. 50



MUCK BAR IRON.

107



MUCK BAR IRON.

As far as possible the presentation of facts relating to the cost of producing muck bar iron has been made to conform to the presentation under pig iron. The titles of the tables and sub-tables are here shown:

TABLE II.—Cost of Production of Muck Bar Iron at Various Establishments in Various States.

- A .- Period covered and quantity of product.
- B.—Quantity and cost of materials used.
- C.—Proportions of materials used.
- D.—General statement of cost for the period.
- E.—Elements of cost in one ton of 2,240 pounds.
- F.—Per cent. of each element of cost in one ton of 2,240 pounds. .
- G.-Additional cost of certain theoretical elements.
- H.—Additional cost of certain theoretical elements in one ton of 2,240 pounds.

As the basis of muck bar iron is pig metal, which has been so fully analyzed, the table showing the cost of production of muck bar iron need not be considered at length.

In sub-table A the days of running time are days of two turns each, except in the cases noted as working only one turn. The general rule is that the establishments work two turns during each of the first five days of the week, one turn on Saturday and are idle on Sunday. In order to show the daily production on full time the time has been reduced to days of two full turns each except in those mills which are never operated at night.

As will be noticed there is a wide divergence in daily output between establishments having the same number of puddling furnaces. This is accounted for by the fact that the number of puddling furnaces reported is the actual number possessed by the establishment, and very frequently exceeds the number in operation at one time.

Sub-tables B and C, relating to the kind and cost of materials used are important in connection with the cost of product, for they furnish the explanations for differences in the cost of materials per ton of product, and also and especially, for differences between labor costs in the same locality, for the price paid for puddling scrap is invariably less than that paid for puddling pig iron, and as a consequence, muck bar iron made wholly or largely from scrap will show a smaller labor cost than if it were made from pig iron.

TABLE II.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

A.—PERIOD COVERED AND QUANTITY OF PRODUCT.

Es- tab-		Period covered. Muck bar iron produced (tonsof 2,240 pounds).					Number of-		
nent ium- ber.	Locality.	Terminal dates.	Days of run- ning time.	Total.	Per day.	Pud- dling fur- naces.	Trains of rolls		
1	United States	Jan. 5, 1889, to Jan. 4, 1890	270	26, 599	99	47	1		
2	do	July 1, 1889, to Dec. 31, 1889	120	1,400	12	6	1 3		
3	do	Feb. 1, 1889, to Jan. 31, 1890	98*	2, 149	22	12	1 3		
4	do	Sept. 1, 1889, to Nov. 30, 1889	72	4, 321	60	20	1		
5	do	Nov. 1, 1889, to Jan. 31, 1890	27	1,656	61	(a)	1		
- 6	do	Dec. 1, 1889, to Dec. 31, 1889	24	480	20	8	1		
. 7	do	Jan. 1, 1889, to June 30, 1889	89	3, 278	37	19	1 :		
8	do	July 1, 1888, to June 30, 1889	242	8, 347	34	12			
9	do	July 1, 1888, to June 30, 1889	205	7, 657	37	8	16		
10	do	July 1, 1888, to June 30, 1889	253	13, 530	53	24	1 3		
11	do	July 21, 1888, to Aug. 3, 1889	229	4, 545	20	8	1		
12	do	Aug. 1, 1888, to July 31, 1889	186	2, 222	12	4			
13	do	Jan. 1,1889, to Dec. 31, 1889	256	8, 886	35	16	16		
14	do	Jan. 1, 1889, to Dec. 31, 1889	281	38, 258	136	16	1		
15	do	Jan. 1, 1889, to Jan. 31, 1890	281	7, 683	27	12	1		
16	do	Jan. 1, 1889, to Dec. 31, 1889	(b)	(b)	(b)	(b)	(6)		
17	do	Jan. 1, 1888, to Dec. 31, 1888	149	9, 926	67	33			
18	do	July 1, 1888, to June 30, 1889	182	16, 240	89	34			
19	do	Nov. 1, 1888, to Oct. 31, 1389	c 290	2, 150	67	6	1		
20	do	Jan. 1, 1889, to Dec. 31, 1889	232	6, 975	30	12			
21	do	Jan. 1, 1889, to Dec. 31, 1889	281	9, 800	35	16			
22	do	Jan. 1, 1889, to June 30, 1889	140	8,827	63	32			
23	do	June 3, 1880, to June 16, 1889	11	252	23	10			
25	do	Ju.y 1, 1889, to Oct. 21, 1889	236	3,000	34	16 20			
26	do	July 1, 1888, to June 30, 1889		8, 131 9, 050			1		
27		Feb. 1, 1889, to Jan. 31, 1890 Jan. 1, 1890, to Mar. 31, 1890	188	3,462	48	23 24			
28	Continent of Europe	Jan. 1, 1869, to Dec. 31, 1889	300	29, 964	100	25	I all all		
29	do	(b)		(b)			100		
30	do	Oct. 1, 1889, to Dec. 31, 1889	(6)	2,835	(6)	(6)	(6)		
31	do	Apr. 1, 1889, to June 30, 1889	(b)	6,004	(6)	(6)			
32	do	July 1, 1880, to Sept. 30, 1889	(b)	6, 777	(6)	(b)	(6)		
33	do	Oct. 1, 1889, to Dec. 31, 1889	(6)	7,062	(6)	(6)	(6)		
34	do	Jan. 1, 1888, to Dec. 31, 1888	(b)	(b)	(6)	(b)	(6)		
35	Great Britain	Apr. 1, 1888, to Sept. 29, 1888	109	4.710	43	30	(0)		
36	do	Jan. 1, 1889, to Dec. 31, 1889	275	20, 303	74	33			
37	do	Jan. 1, 1889, to June 30, 1889	143	12, 902	90	35	1 3		
38	do	July 28, 1889, to Aug. 3, 1889	6	165	28	11	1 3		

s There are no puddling furnaces; the product was made entirely from scrap which was reheated

only.

Not reported.
Only one turn per day is worked in this establishment.

TABLE 11.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES-Continued.

B.-QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1 to 27 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 85 to 88 are in Great Britain.]

Es- tab- lish-		Tons of 2,	240 pounds		Cost.					
ment num- ber.	Pig iron.	Serap.	Ore.	Other.	Pig iron.	Scrap.	Ore.	Other.	Total.	
1	a 27, 955	(a)	(b)		a \$292, 394	(a)	\$72, 620		\$365, 014	
1 2	1, 185	200	400		20, 785	\$2, 240	2, 400		25, 425	
3	2, 364		321		33, 5:1		1,500		35, 021	
	1,791	2, 894	467		25, 507	44, 815	1, 668		71, 990	
5		1, 832	Division.		20,000	36, 330	2,000		36, 330	
6	521	-1,00-	96		8, 336		672		9, 008	
7	3, 390	7	1,475		57, 821	71	5, 900		63, 793	
8	9, 998		1,114		139, 892		7, 800	**********	147, 692	
9	9,188		307		134, 401		2, 150		136, 551	
10	11, 977	3, 083	2,095	*********	170, 119	60, 298	15, 720		246, 137	
11	3, 916	946	870		58, 614	13, 662	5, 890	***************************************	78, 166	
	2, 333	240	135		33, 828	13, 002	920			
12	8, 649	463	2, 378			5, 731	13, 154	********	34, 748	
13			2, 3/8	********	124, 457		10, 104	********	143, 342	
14	36, 270	5, 536	2, 250	*********	518, 469	122, 760	11, 486		652, 715	
15	6, 573	1,822	1, 488	*********	100, 228	28, 867	10, 363	*******	139, 458	
16	(6)	(6)	(6)	(6)	(6)	(6)	(b)	(6)	(b)	
17	9, 876	221	2, 130		161, 843	3, 630	14, 153		179, 626	
18	16, 420	1,043	4, 138	********	247, 942	22, 426	23, 300	*******	293, 668	
19	2, 175		498		33, 713	********	2, 990	*********	36, 703	
20	7, 045	*******	2, 329		107, 014		11, 645	********	118, 659	
21	5, 600	5, 670	2,450		91,000	73, 710	14, 700		179, 410	
22	8, 827	********	2,000		125, 500		10,000		135, 500	
23	252		56		3, 780		363		4, 143	
24	3, 268	*********	412		50, 652		2, 370		53, 022	
25	8, 399	882	1,047	l	124, 305	13,418	6, 282		144, 008	
26	9, 435		1.914		143, 762		12, 039		155, 801	
27	2, 507	1, 279	1, 098		31, 341	12, 968	5, 105		49, 414	
28	34, 959		(6)	222.5	342,768		2, 274		345, 042	
29	(6)	(6)	(b)	(b)	(b)	(b)	(b)	(6)	(6)	
30	3, 250	10/	(6)	107	c 29, 003	107	e 584	,,,,	e 29, 587	
31	47, 205	(d)	107	1000	85, 569	2,966			88, 530	
32	48, 119	(d)	0.00	100000000000000000000000000000000000000	101, 635	2,982		2000	104, 61	
33	d 8, 439	(d)	1000		113, 190	4, 096			117, 286	
34	(b)	(6)	(b)	(b)	(b)	(b)	(b)	(b)	(6)	
35	4, 896	352	516	e 32	39, 149	3, 232	1, 835	e\$88	44, 304	
36	a 21, 123	(a)	4, 629	6 32	a, c 194, 913	(a)	013, 174	6 900	c 208, 087	
37	13, 725	108	3, 651		120, 719	920			131, 714	
	175	108	3, 651	617		c30	10, 076	0, # 20		
38	1/9		17	617	c 1, 969	C 30	c 40	0, 6 20	c 2, 059	

e The quantity and cost of scrap are inseparably combined with the quantity and cost of pig iron.

b Not reported.

e Not cost: the value of the cinder, scrap, etc., has been deducted.

d The quantity of scrap is inseparably combined with the quantity of pig iron,

e Cinder.

110 REPORT OF THE COMMISSIONER OF LABOR.

TABLE 11.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

. .- PERIOD COVERED AND QUANTITY OF PRODUCT.

Es- tab- lish-	,	Period covered. Muck bar iron produced (tonsof 2,240 pounds).					Number of-		
nent num- ber.	Locality.	· Terminal dates.	Days of run- ning time.	Total.	Per day.	Pud- dling fur- naces.	Trains of rolls		
1	United States	Jan. 5, 1889, to Jan. 4, 1890	270	26, 599	99	47			
2	do	July 1, 1889, to Dec. 31, 1889	120	1,400	12	6			
3	do	Feb. 1, 1889, to Jan. 31, 1890	98	2, 149	22	12			
ī	do	Sept. 1, 1889, to Nov. 30, 1889	72	4, 321	60	20			
5	do	Nov. 1, 1889, to Jan. 31, 1890	27	1,656	61	(a)	1		
. 6	do	Dec. 1, 1889, to Dec. 31, 1889	24	480	20	, 8	1		
-7	do	Jan. 1, 1889, to June 30, 1889	89	3, 278	37	19			
8	do	July 1, 1888, to June 30, 1889	242	8, 347	34	12			
9	do	July 1, 1888, to June 30, 1889	205	7, 657	37	8			
10	do	July 1, 1888, to June 30, 1889	253	13, 530	53	24			
11	do	July 21, 1888, to Aug. 3, 1889	229	4, 545	20	8			
12	do	Aug. 1, 1888, to July 31, 1889	186	2, 222	12	4	1		
13	do	Jan. 1, 1889, to Dec. 31, 1889	256	8,886	35	16			
14	do	Jan. 1, 1889, to Dec. 31, 1889	281	38, 258	136	16			
15	do	Jan. 1, 1889, to Jan. 31, 1890	281	7,683	27	12	av.		
16	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1888, to Dec. 31, 1888	(6)	(6)	(6)	(b)	(b)		
18	do	July 1, 1888, to June 30, 1889	149	9, 926	67 89	33	1		
19	do	Nov. 1, 1888, to Oct. 31, 1889	c 290	2,150	67	6	1		
20	do	Jap. 1, 1889, to Dec. 31, 1889	232	6,975	30	12			
21	do	Jan. 1, 1889, to Dec. 31, 1889	281	9,800	35	16			
22	do	Jan. 1, 1889, to June 30, 1889	140	8,827	63	32			
23	do	June 3, 1889, to June 16, 1889	11	252	23	10			
24	do	July 1, 1889, to Oct. 31, 1889	89	3,000	34	16			
25	do	July 1, 1888, to June 30, 1889	236	8, 131	34	20			
26	do	Feb. 1, 1889, to Jan. 31, 1890	1 188	9,050	48	23	1		
27	do	Jan. 1, 1890, to Mar. 31, 1890	70	3,462	49	24	1		
28	Continent of Europe	Jan. 1, 1889, to Dec. 31, 1889	300	29, 964	100	25	1		
29	do	(b)_	(b)	(b)	(6)	(b)	(6)		
30 -	do	Oct. 1, 1889, to Dec. 31, 1889	75	2, 835	38	9	1. 537		
31	do	Apr. 1, 1889, to June 30, 1889	(6)	6,004	(6)	(6)	(6)		
32	do	July 1, 1889, to Sept. 30, 1889	(6)	6, 777	(b)	(6)	(6)		
33	do	Oct. 1, 1889, to Dec. 31, 1889	(b)	7,062	(6)	(b)	(6)		
34	do	Jan. 1, 1888, to Dec. 31, 1888	(6)	(6)	(6)	(6)	(6)		
35	Great Britain	Apr. 1, 1888, to Sept. 29, 1888	109	4,710	43	30			
36	do	Jan. 1, 1889, to Dec. 31, 1889	275	20, 303	74	33 35			
38	do	Jan. 1, 1889, to June 30, 1889 July 28, 1889, to Aug. 3, 1889	143	12,902 165	90 28	35			
90		a my so, toos, to Aug. 3, 1869	0	100	28	- 11			

s There are no puddling furnaces; the product was made entirely from scrap which was reheated

only.

To Not reported.

Only one turn per day is worked in this cetablishment.

TABLE II.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES-Continued.

B.-QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1 to 27 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 35 to 38 are in Great Britain.]

Es- lish-		Tons of 2,2	240 pounds		Cost.					
ment num- ber.	Pig iron.	Scrap.	Ore.	Other.	Pig iron.	Scrap.	Ore.	Other.	Total.	
1	a 27, 955	(a) 200	(6)		a \$292, 394	(a)	\$72, 620		\$365, 01	
2	1, 185	200	400	100 100 100 100	20, 785	\$2, 240	2, 400	0.0000000000000000000000000000000000000	25, 42	
3	2, 364		321		33, 5:1		1,500		35, 02	
4	1, 791	2, 894	467		25, 507	44, 815	1, 668		71, 99	
5		1, 832			20,001	36, 330	4,000		36, 33	
6	521	2,000	96		8, 336		672		9, 00	
7	3, 390	7	1,475		57, 821	71	5, 900			
8	9, 998		1, 114		139, 892	**	7, 800		63, 79	
9	9, 188		307		134, 401		2, 150		147, 69	
10	11, 977	3, 083	2, 095			60, 298	15, 720		136, 55	
11	3, 916	946	870		170, 119	13, 662			246, 13	
	2, 333	940		*******	58, 614	13, 002	5,890	*********	78, 16	
12		******	135		33, 828	*********	920	********	34, 74	
13	8, 649	465	2, 378	*******	124, 457	5, 731	13, 154		143, 34	
14	36, 270	5, 536	2, 250	*********	518, 469	122, 760	11, 486		652, 71	
15	6, 573	1,822	1, 488		100, 228	28, 867	10, 363	*********	139, 45	
16	(6)	(b)	(b)	(6)	(b)	(b)	(6)	(b)	(6)	
17	9, 876	221	2, 130		161, 843	3, 630	14, 153	*******	179, 62	
18	16, 420	1,043	4, 138		247, 942	22,426	23, 300		293, 66	
19	2, 175	********	498		33, 713		2, 990	*******	36, 70	
20	7, 045	******	2, 329		107, 014		11, 645	********	118, 65	
21	5, 600	5, 670	2, 450		91,000	73, 710	14, 700		179, 410	
22	8, 827	********	2,000		125, 500		10,000		135, 50	
23	252		56		3, 780		363		4, 14	
24	3, 268		412		50, 652		2, 370		53, 02	
25	8, 399	882	1.047		124, 305	13, 418	6, 282		144, 00	
26	9, 435		1,914		143,762		12, 039		155, 50	
27	2, 507	1, 279	1.098		31, 341	12, 968	5, 105		49, 41	
28	34, 950		(b)	100000000000000000000000000000000000000	342,768		2, 274		345, 04	
29	(6)	(6)	(b)	(b)	(b)	(b)	(b)	(6)	(6)	
30	3, 250		(b)	107	c 29,003	107	e 584		¢ 29, 58	
31	47, 205	(d)	The state of		85,569	2,966			88, 53	
32	d 8, 119	(4)			101,635	2, 982			104, 61	
33	d 8, 439	(d)			113, 190	4, 096			117, 28	
34	(b)	. (6)	(b) 516 4 629	(b)	(6)	(b)	(6)	(b)	(b)	
35	4, 896	352	516	e 32	39,149	3, 232	1, 835	e\$88	44, 30	
36	a 21, 123	(a)	4, 629		a. a 194, 913	(a)	013, 174	6 400	¢ 208, 08	
37	13, 725	108	3, 651		120,719	920	10, 076		131, 71	
38	175	108	17	e 17	c 1, 969	c30	0 40	0, e 20	c 2, 05	

a The quantity and cost of scrap are inseparably combined with the quantity and cost of pig iron.

b Not reported.

e Not cost; the value of the cinder, scrap, etc., has been deducted.

d The quantity of scrap is inseparably combined with the quantity of pig iron,

c Cinder.

TABLE 11 —COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Communical

C.—PROPORTIONS OF MATERIALS USED.

[Barrishaharan sambars I to II are in the United States; numbers II to It are on the continent of Harane; and numbers II to III are II Great Britans.]

, <u>,</u> ,	Premis of motionis to one ton of pro-			product.	Cost of meternie per ton of 1,300 pounds				
_	Mg zon.	Seemp.	Clean.	Other.	Pig iron.	Scoop.	Ozra.	Other.	
	e:B	· 60	·ān		45145				
•			منه آ		377, 544	441.500	<u> </u>		
•	13	_	135		14, 130		T. 43		
	- =	1.76	=		32	11.45	153		
•		:5	_			3 2	24.2		
•	<u> </u>	- 44	445		26, 300		7, 300		
	111	5			17.59	101, 143			
	÷ 41-	3	I COM			W. 366	1.5		
•	1.5		339		12 sec		1. 442		
•	1 =		39		:A \$25		7 363		
	<u> 383</u>	510	34.7		14, 294	3.53	7. 334		
		45	(3		LA 348	: L 442			
•	1.32		:36		IA 596		4.53		
Ē	1 160	117	500		14.30	= ==	1.52		
	1.34	224	132		34.35	2	5. 36		
	- 11	521	424		15. 245	15.844			
	ão		.	.61	7. —	7	D .	(d)	
•	Ĩ.S			(4)	36.388	ni es	4.945		
	:=	:2			13	151	141		
	: =		Sig		范室		6.484		
•			746		第三	• • • • • • • • • • • • • • • • • • • •			
•	: 		:			•••••	7 7 3		
L		2.36	-		14. 29	3.18	C, 200		
2	1.30		300		14 214		5.100		
8	: 20		•		77. 600		C ALC		
	<u> </u>		388		15.		7.35		
1	1.11+	343	38		:A 500	23.223	E NO		
	:=		474		35.57		6.24		
-		275	73.0		-1 Wi	10, 130	4 410		
	7 (55				1 105		-81	******	
	5.	àn.	5,	, b)	5.	31	à.	b 1	
		9.	ă.		11.20	•	۵.	•	
		æ.	٠.		2.29	4	•	*******	
L					4 12 345				
2	5 5	4 3 .		******	11.50	a.			
ı	S 25					4 .	*****		
L	٠	b)	b1	b	<u>}</u>	b	/ b i	ði	
	÷ ===		346	4 23	*. 384	1.2	1 556	182	
•	===	4	51.1		a. 13. 🚞	⊕	e2 146		
-	1.72	3	4		3. 796	5, 519	2 780		
	• 778	Æ	31	1233	: L. Si	25. NW	- 153	Adl:	

s. The remembrand and nest of entrip are inseriously escalated with the quantity and east of pag tree.

d linear.

s Fox root - the value of the under, ecop, etc., has been deducted.

TABLE II.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

D.—GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1 to 27 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 35 to 38 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Es-		Materials.			Officials		Supplies		
lish- ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net	Labor.	and clerks.	Fuel	and repairs.	Taxes.	Total
1	\$365, 014	\$4, 546	\$360, 468	\$206, 046	\$6,500	\$53, 947	\$8,344	\$794	\$636, 099
2	25, 425	182	25, 243	8, 032	420	3, 336	862	31	37, 924
3	35, 021	600	34, 421	16, 225	1,611	3,009	2, 261	300	57, 827
4	71, 990	4,500	67, 490	30, 111	3, 500 276	8, 237	3,277	350 59	112, 965
5	36, 330		35,530	a 7, 282	108	2,120	527 360		45, 794
6	9, 008 63, 792	62 656	8,946	2, 640 25, 682	2,855	1,008 9,874	2, 120	1,500	13, 104
7 8	147, 692	3, 280	63, 136 144, 412	62, 674	4, 100	13, 968	5, 158	1,500	105, 167 229, 850
9	136, 551	2,500	134, 051	54, 886	5, 500	9, 138	4, 429	97	208, 101
:0	246, 137	8, 248	237, 889	101, 679	6, 999	21, 638	10,001	230	378, 436
ii	78, 166	3, 211	74, 955	34, 562	1, 367	5, 322	3, 097	418	119, 721
12	34, 748	1,738	33, 010	18, 088	1, 143	4, 880	2, 654	58	59, 833
13	143, 342	3, 767	139, 575	65, 765	2, 489	15, 988	7, 881	151	231, 849
14	652, 715	3,500	649, 215	285, 043	9, 968	74, 650	38, 712	832	1, 058, 420
15	139, 458	6,489	132, 969	56, 695	4, 000	14, 119	7, 355	398	215, 736
16	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(8)	(b)
17	179, 626	3, 593	176, 033	71, 016	3, 216	7,062	8, 635	529	266, 491
18	293, 668	6, 242	287, 426	125, 535	2, 500	28,986	10, 215	450	455, 112
19	36, 703	784	35, 919	15, 866	1, 340	4,770	2, 374	185	60, 454
20	118, 659	4,000	114, 659	42, 471	2, 200	15,812	7, 753	174	183, 069
21	179, 410	9, 240	170, 170	51, 000	3,000	25, 536	7, 752	550	258, 008
22	135, 500	1, 620	133, 880	68, 409	3, 500	15,500	9, 250	733	231, 272
23	4, 143	23	4, 120	1, 271	. 117	338	213	23	6, 083
24	53, 022	1,400	51, 622	18, 541	1,500	5, 572	6, 240	207	83, 682
25	144, 005	3,564	140, 441	47, 448	2, 067	18, 547	8, 933	1,441	218, 877
26 27	155, 801	4, 301 2, 283	151, 500	66, 901 28, 732	3, 115	10, 615	6, 467 4, 924	1, 631 266	91, 370
28	49, 414 345, 042	11, 780	47, 131 333, 262	52, 909	3, 441	62, 849	25, 990	1, 108	479, 649
29	(6)	(6)	(6)	(b)	(6)	(b)	(6)	(6)	(b)
30	(6)	(6)	29, 587	7, 445	802	5, 990	2, 559	306	46, 689
31	88, 535	3,332	85, 203	13, 857	c2, 450	2, 900	4, 287	(c)	108, 607
32	104, 617	3, 741	100, 876	15, 858	c2, 318	2,772	3, 822	(c)	125, 646
33	117, 286	5, 699	111, 587	16, 419	e2, 634	3,044	4, 378	(0)	138, 062
34	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(6)	(b)
35	44, 304	524	43, 780	11, 152	177	8, 994	3, 181	74	67, 358
36	(b)	(b)	208, 087	75, 627	1, 422	37, 752	16, 612	975	340, 475
37	131, 715	3, 025	128, 690	44, 677	876	21, 166	8, 493	180	204, 082
38.	(b)	(b)	2, 059	495 .	13	177	131	3	2, 878

s The low labor cost in this establishment is accounted for by the fact that the product was made satirely from acrap which was reheated only.

b Not reported.
c The expenditures for taxes are inseparably combined with those for officials and clerks.

H. Ex. 265---8

TABLE II.—COST OF PRODUCTION OF MUCK BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

E.—ELEMENTS OF-COST IN ONE TON OF 2,240 POUNDS.

|Establishments numbers 1 to 27 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 35 to 38 are in Great Editain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

*			M	aterials.				30.81					67
Estab- lish- ment			Gross.			Value of cin-	1	La-	Offi- cials and	Fuel.	Sup- plies and	Taxes.	Total.
ber.	Pig iron.	Scrap.	Ore.	Other.	Total.	der, scrap, etc.	-Net.	001.	cl'ks.		pairs.		
1	a\$10.993	(a)	\$2,730		\$13, 723	80. 170	\$13. 553	87.746	\$0.244	\$2.028	\$0.313	\$0.030	\$23, 914
2			1.714		18, 161	. 130	18, 031	5, 737	.300	2 383	. 616	. 022	27, 089
3			. 698		16, 296	. 279	16, 017	7, 550	. 750	1. 400	1,052		26, 909
4						1.041		6, 969	. 810	1.906	.758		26, 143
5		21, 938				. 483	21. 455		. 167	1, 250	.318		27. 653
6			1, 400			. 129		5.500	. 225		. 750		27, 300
7		. 022			19, 461	. 200		7, 835		3. 012	. 647	. 457	32. 083
8			. 934			. 393	17. 301		.491		. 618	.017	27.537
9			, 281			.327	17,507		.718		.579	.013	27, 178
10			1, 162		18, 192	.610	17. 582				.739		27, 970
11			1. 296		17, 198	.706	16. 492			1. 171	. 681	. 092	26, 341
12			.414		15, 638	.782	14. 856		.515		1. 195		26, 928
13					16. 131	. 424	15, 707		.280	1. 799	. 887	.017	26, 091
14			.300		17. 061	.092				1. 951	1.012		27, 665
15			1,349		18, 152	. 845			. 521	1.838	. 957	.052	28, 080
16			1. 420		16, 945	. 350	16, 595		c. 555	1. 410	. 923		d 26. 264
17			1. 426			.362	17, 735		. 324	.711	.870	. 053	
	15, 267	1. 381	1. 435			.384	17, 699		.154	1. 785	. 629	.027	28, C24
	15. 680	1. 001	1. 391			.365	16, 706		.623	2, 219	1. 104	.086	28, 118
			1. 670			.573	16, 439		.315		1. 111		
		7, 521				.943	17, 364		.306		.791	. 025	26. 246
			1. 133				15, 167			2, 000		. 056	26, 327
						. 184			. 397	1. 756	1.048		26. 201
23	15,000		1,440			. 091	16. 349		.465		. 845		24, 135
24		******				. 467	17. 207		. 500	1.857	2,080		27. 894
25		1.650				. 439	17, 272		. 254		1. 099		26. 919
26	15. 885		1.330			. 475	16, 740		. 344	1.173	. 713		26. 545
27		3, 746	1.474			. 659	13.614		.043		1. 422		26, 392
28		******	. 076		11.515	. 393	11, 122	1. 709	.115		. 867	. 037	16. 008
29			e. 098		e12. 295	S	12, 295		(g)	1.961	1.388	(g)	17. 468
30			e. 206		e10. 436	(1)		2,626			. 903		16. 469
31	14. 252	.494	(h)		14.748	. 555	14. 191			. 483	A. 714		18. 104
32		. 440	(h)			. 552	14.885			.409	A. 564		18.540
33	16. 028	. 580	(h)	*******		. 807	15. 801			. 431	h. 620	(1)	19. 550
	j 12. 816	(1)	(j)	(1)	12, 816	. 638	12, 178	1.666		1. 161	. 532	(k)	115, 994
35		. 686		m\$0.019		.111	9. 295	2.368	. 038	1.909	. 675	.016	14. 301
	a e 9. 600	(a)	e. 649		e10.249	S	10.249		. 070		. 818		16.770
37		.071	. 781		10, 209	. 235	9.974		.068	1.641	. 658		15.818
38	e 11. 933	e. 182	e. 243	e.m. 121	e12, 479	(J)	12.479	3.000	. 079	1.072	. 794	.018	17. 44:

s The expenditures for scrap are inseparably combined with those for pig iron.

b The low labor cost in this establishment is accounted for by the fact that the product was made entirely from scrap which was reheated only.

c The expenditures for taxes, insurance, and interest are inseparably combined with those for officials and clorks.

d Including insurance and interest.

Net cost.

The value of the cinds.

e Not sost.

f The value of the cinder, scrap, etc., produced has already been deducted.

g The expenditures for officials and clerks, and taxes are inseparably combined with those for labor.

A The expenditures for ore are inseparably combined with those for supplies and repairs,

f The expenditures for taxes are inseparably combined with those for officials and clerks.

The expenditures for other materials are inseparably combined with those for pig iron.

The expenditures for taxes and insurance are inseparably combined with those for officials and clerks. elerks.
I Including insurance.
The Cinder.

TABLE 11.—COST OF PRODUCTION OF MUCK BAB IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

F.-PER CENT. OF RACH ELEMENT OF COST IN ONE TON OF 2,940 POUNDS.

[Establishments numbers 1 to 37 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 35 to 38 are in Great Britain. This table is based on the preceding one, and to avoid duplicating the notes, which would be the same in substance, they are here emitted, and the reader is referred to that table for such information as they furnish.]

Estab- lishment number.	Materials (not).	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	58. 67	32, 39	1,02	. 8.48	1.81	.13	100
2	66, 56	3L. 18	1.11	8, 80	2.27	.08	100
8	59.52	28. (16	2.79	5. 20	3.91	.52	100
4	59.74	26. 66	8.10	7.29	2.90	.81	100
5	77.50	16, 90	.00	4.63	1.15	. 13	100
G	68.27	20.15	. 82	7. 00	2.75	.32	100
7	60.04	2L 42	2.71	9. 39	2.02	1.42	100
8	62. 83	27. 01	1.78	6. 08	. 2.24	.06	· 10d
9	64.43	26. 37	2.64	4.39	2.18	.05	100
	62. 86	26. 87	1.85	5.72	2.64	. 05	100
1	62.61	28. 87	1.14	4.45	2.58	. 35	100
2	55. 17	80, 23 28, 27	1.91 1.07	8, 15 6, 89	4.44	. 10	100
3	60. 20 61. 34	26, 93	1.07	7.05	7.40 3.66	.07	100
<u> </u>	61. 63	26, 27	1.86	6.55	2.41	.18	100
<u> </u>	63, 19	23, 83	2.11	5.27	2.51	. 10	100 100
6	66.06	26, 65	1.20	2.65	2.24	. 20	. 100
7	63, 16	27.58	.55	6. 27	2.24	-: 10	100
9	59.41	26, 25	2.21	7. 80	193	.81	. 10
	62.63	23. 20	1. 20	1.64	1.23	. 10	100
1	65.96	19. 77	1. 16	9, 90	8.00	.21	100
2	67. 89	29.58	1.61	6, 70	4.00	. 32	10
1	67, 74	20, 90	1. 93	B. 55	8.50	. 38	10.
4	61.69	22, 16	1.79	6, 66	7.45	. 25	10
£	64, 16	21, 68	. 95	8. 47	4.08	.00	100
3	63.06	27. 85	1, 30	4.42	2.69	.68	100
7	51. 58	81.45	. 16	11.13	5, 29	. 29	100
8	60, 48	11.06	. 72	18. 10	5.42	.23	100
9	70, 88	10.44		11.23	7. 95		. 100
0	63, 37	15, 94	1.72	12.83	5, 48	. 66	100
1	78, 39	12, 75	2, 25	2.67	3.94		100
2	80. 29	12. 62	1.84	2. 21	8.04		100
3	80. 82	11.89	1.91	2.21	8. 17		100
4	76.14	10. 42	2, 86	7. 26	8. 32		100
5	64. 99	16.56	. 27	13. 35	4.73	.11	100
6	6L 1i	22. 21	.42	11.09	4.88	. 29	100
7	63. 06	21. 89	. 43	10. 37	4.16	.09	. 100
2	71.55	17. 20	. 45	6. 15	4.55	. 10	100

THE COMMISSIONER OF LABOR.

F PRODUCTION OF MUCK BAR IRON AT VARIOUS STATES—Continued.

THEORETICAL REPORTED

remander. "Talling 2 in Taims States numbers 25 to 34 are on the continent of Livrons. and memory 25 to 25 are in Great Britain.]

•		Addition	nai cost.	
Management 2 statistics	Changemen.	Interest.	Depreciation of value of plant.	Total.
	84, 131 15	\$3, 396 236		\$4,574 271
	:00 335			100 335
		5, 500		25 5, 725
	245 125 361		\$1, 640 2, 500	1, 885 2, 625
	361 118 117	1, 136 193		361 1, 234
•	34.7 978	1, 157		310 1, 504 978
	تت عد به	(a)		225 (a) 485
	===	3, 302		225 3, 354
	Orka s urg	7, 415 3, 000 4, 500	2, 000 6, 500	9, 617 3, 050
•	3 36	54 2,334	233	11, 600 74 2, 770
				1, 463
	316 75	1, 923		346 2, 997
·• .				(a)
•	142			142
				28

Leaver set o

TABLE II.—COST OF PRODUCTION OF MUCK BAR IBON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

III.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 27 are in the United States; numbers 28 to 34 are on the continent of Europe; and numbers 35 to 38 are in Great Britain.]

		Vagitioner	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total. ~
	\$0,045	\$0, 127		80, 17
	. 025	169	····:	. 19
	. 047	.103		.047
	.078			. 05
	-		••••••	.07
	. 052			••••••
	. 052			. 05
T	. 068	1. 678		1. 74
B	. 029		\$0. 197	, 22
)	. 016		. 327	. 84
	. 027			. 02
	. 026	, 250		. 27
2	. 053	.087		. 14
	. 039	.130	1	. 10
L	. 026			. 10
	. 029		[. 02 . 02
		••••••		. UZ
B	(6)	(6)		(a)
7	.049			. 041
B	.014			. 01
)	. 024	1, 536	l	· 1. 56
)	. 020	1,063	. 287	1, 87
	, 005	. 306		. 81
2	.068	.510	. 736	1.81
	. 080	.214	1	. 29
	.068	. 778	.077	. 92
	.077	103		
	.011	. 103		. 18
		•••••		
7	. 100			. 10
3. :	. 002	. 098		. 10
)				
)		. 	l. 	
		l	1	
,				
			1	
.	(a)	l	1	(6)
5	(4)	l		(ω)
	.007			.00
§	.007		[·····	
	002			. 00

a Not reported.

SUMMARY OF COST OF MUCK BAR IRON IN FOUR ESTABLISHMENTS IN GREAT BRITAIN.

[This summary is drawn from the preceding sub-tables A to H. The establishments covered are numbers 35 to 38, inclusive, being all the muck bar iron mills in Great Britain from which reports were obtained. As may be seen the periods covered are irregular and are in the years 1863 and 1889.]

	Tone of 2,	240 pounds.
Elements of cost.	Coat of 38,080.	Average cost of one.
Materials (net). Labor	\$382, 616 181, 961 2, 488 68, 080 28, 417	\$10.948 8,465 .065 1,788
Supplies and repairs	1, 232	: (433
Total	614, 793	- 16.145

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Two establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Two reported that they had no insurance. All four establishments reported that there was no expenditure for interest and that nothing was charged to depreciation. The sum entered in the first column below is, of course, apportioned in the second column among the whole four establishments.]

Insurance		
Depreciation of value of plant		
Total	· 170	. 004

From the foregoing tables it is seen that the average cost of muck bar iron in twenty-six establishments in the United States is \$26.843, and that should what has been denominated theoretical elements of cost be added, the total cost would not be much increased, the average for twenty-four establishments being but 25.5 cents per ton. The cost of muck bar iron, as shown by five establishments on the continent of Europe, is \$17.073. Only one establishment reported any charge for the theoretical elements, this being for insurance and interest, which, if added, would increase the cost but 5.7 cents per ton. The average cost of muck bar iron in Great Britain, as shown by the returns from four establishments, is \$16.145, and the theoretical elements, if added, would increase this cost only 0.4 of a cent per ton, this figure being derived from two establishments.

LABOR COST PER TON OF MAKING MUCK BAR IRON IN GREAT BRITAIN.

The following table shows the cost of labor in making muck bar iron in England in various years from 1877 to 1890, inclusive. The labor cost referred to in this table is that necessary for the production of muck bar iron from pig iron, and does not include the direct labor cost chargeable to all the processes prior to that of making muck bar iron. These costs relate to a well known establishment and were made up for the information of the head of the firm.

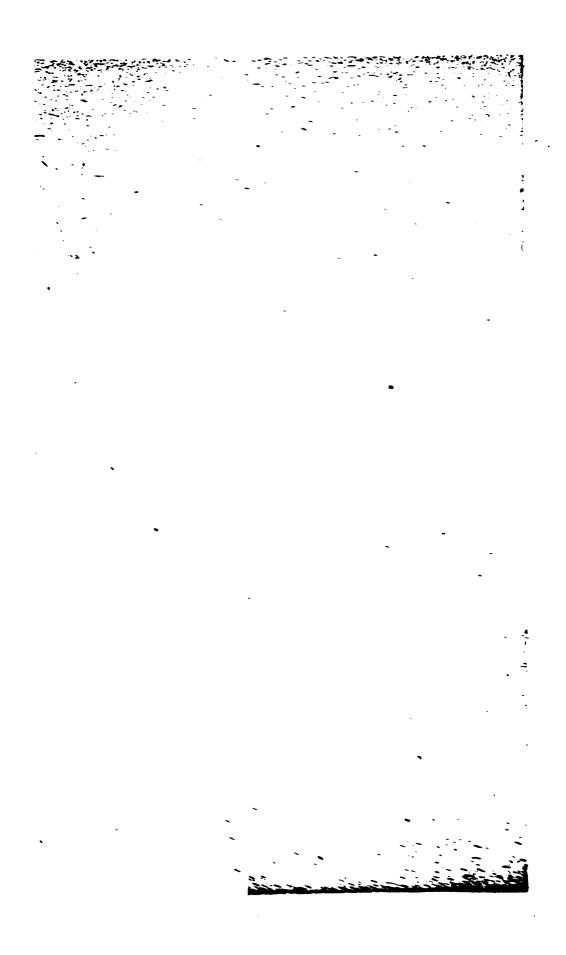
LABOR COST PER TON OF MAKING MUCK BAR IRON AT A WELL KNOWN WORKS IN GREAT BRITAIN.

Yesth.	1877.	1878.	1879.	1880.	1881.	1882.	1887.	1880.	1890.	1890.
	!						<u> </u>	<u> </u>		
January	\$3.584	23,500	83, 268	23,506	23, 400	83, 265	\$3.073	\$2,857	83,220	\$3.65
February	3.506	1.522	3, 254	3 575	3 292	2 317	1.052	2 506	1,196	1 272
March	3.437	1.482	1.050	3,507	3.244	2 346	2.963	2.930	3.307	2.71
April	1.439	2,506	2.064	3,496	3, 245	2, 422	3.113	1.000	1.23	2.97
May	2. 454	1 220	1 122	1 400	3, 253	1.376	2.968	2 956	1.205	
June	1111	1414	ī	1 385	1 20	1 548	100	1	1.372	
July	2.55	1 400	2011	1 216	3.211	2.519	2 151	100	2.514	1
ARTES	1.567	2.347	1 002	1 216	1 273	2.547	1 153	1 1	32 773	1
	1 46	îm	100	1 374	lim	1 637	100	2 2		l
Soptember										
October	2.07	2. 284	2.043	3.378	2, 196	(6)	2.886	2.945	2.019	
Korember	2.536	1. 208	2, 130	2, 373	2.149	(a)	2.800	2.058	1.625	
December	2.542	1.233	3. 258	1.423	2, 125	(&)	2.949	2.654	2.746	
Average	2.537	2.401	2.120	2.435	1, 237	2.437	2.031	2.978	2.449	3,70

a The books containing costs for this month were lost or mislaid.

b Helidays this menth, and small production caused increased labor cost.

FINISHED BAR IRON.



FINISHED BAR IRON.

The form of presentation of facts used in the tables under pig iron and muck bar iron has been followed in the case of finished bar iron also, as far as the different conditions surrounding its manufacture would allow. The titles of the table and sub-tables for finished bar iron are here shown:

TABLE III.—Cost of Production of Finished Bar Iron at Various Establishments in Various States.

- A.—Period covered and quantity of product.
- B.—Quantity and cost of materials used.
- C.—Proportions of materials used.
- D.-General statement of cost for the period.
- E.—Elements of cost in one tou of 2,240 pounds.
- F.—Per cent. of each element of cost in one ton of 2,240 pounds.
- G.—Additional cost of certain theoretical elements.
- H.—Additional cost of certain theoretical elements in one ton of 2,240 pounds.
- In all but two of the establishments from which reports were obtained more than one kind or description of bar iron was made, and the number of tons produced during the period and per day in each of these establishments, as shown in sub-table A, represents the quantity of all kinds of fluished bar iron made. To this mixed product the generally descriptive term run of mill has been given in these tables. As a general rule two turns a day are worked on the first five week days and only one turn on Saturday, the mills shutting down Saturday night and continuing closed during Sunday. The days of running time, as shown in this table, are obtained for most of the establishments by dividing the total number of turns worked during the period by two, and hence the days of running time shown are days of two turns each and not the actual number of days on which work was done during the period. In establishments numbers 6 and 21 only one turn per day was worked, and the days of running time as shown for these establishments are therefore days of one turn each. In most of these establishments the principal material used is muck bar iron, and the finished bar iron is made directly therefrom. In some of the establishments, however, the principal material used is pig iron; this is made into muck bar, and this product is then made into finished bar iron. It is evident that these latter establishments must have a higher labor cost than those which start the process of manufacture with muck bar iron. This fact will explain the comparatively high cost of labor shown for some of the establishments in sub-tables D and E.

TABLE III.—COST OF PRODUCTION OF FINISHED BAB IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT.

Es-		Period covered.	- 21	Finished bar iron	produce	d.	
tab- lish- ment	Locality.	Terminal dates.	Days of run-	Description.	Tons of poun		Trains of rolls.
ber.		Terminar daves.	ning time.	Description.	Total.	Per day.	rous.
1	United States.	Jan. 5, 1889, to Jan. 4, 1890	225	Run of mill		84	
2	do		72	Run of mill	5, 864	81	
3	do	Nov. 1, 1889, to Jan. 31, 1890	39	Run of mill	3,811	98	1 3
4	do	Feb. 1, 1889, to Jan. 31, 1890	220	Run of mill	a42, 553	193	
5	do	Jan. 1, 1889, to Dec. 31, 1889	193	Run of mill		50	
6	do	Jan. 1, 1889, to Dec. 31, 1889	b 253	Run of mill		b 25	1
. 7	do		59	Run of mill	2, 100	78	
. 8		July 1, 1888, to June 30, 1889	160	Ran of mill		78	
9		July 1, 1888, to June 30, 1889	205	Ran of mill	7, 654	37	
10		July 1, 1888, to June 30, 1889	242	Rup of mill	8, 645	36	
11	do		275	Run of mill		50	
12	do		275	Run of mill		29	
13	do		281	Run of mill	24, 929	89	1000
14	do		(d)	Run of mill		(d)	(d)
15		July 1, 1888, to June 30, 1889	240	Run of mill	16, 750	70	1
16	do		275	Run of mill	8, 839	32	1. 3
17		Jan. 1, 1889, to Jan. 7, 1889	5	1 inch round		36	
18		Jan. 1, 1889, to Jan. 7, 1889	51	1 inch round	297	54	1 3
19	do		212	Run of mill	6, 083	29	
20	do	July 1, 1888, to June 30, 1889	236	Run of mill		17	
21	do	July 1, 1888, to June 30, 1889		Run of mill	2,538	68	1.0
22	Continent of Europe.	1889 (c)	(d)	Run of mill	(d)	(d)	(d)
23	do	Oct. 1, 1889, to Dec. 31, 1889	75	Run of mill	2, 944	39	
24	do	1888 (a)	(d)	(d)		(d)	(d)
25	do		(d)	Run of mill	4, 750	(d)	133.5
26	do		(d)	Ron of mill	5, 342	(d)	
27	do	Oct. 1, 1889, to Dec. 31, 1889	(d)	Run of mill		(d)	
28	Great Britain.		117	Run of mill	3, 811	33	
29	do	Nov. 1, 1888, to Oct. 31, 1889	275	Run of mill	24, 094	88	

This product includes conside rable quantities of rails and splice bars, which are not separately eported.
 Only one turn per day is worked in this establishment.
 Terminal dates not reported.
 Most reported.

TABLE III.—COST OF PRODUCTION OF FINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

B.—QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1 to 21 are in the United States; numbers 22 to 27 are on the continent of Europe; and numbers 28 and 29 are in Great Britain.]

Es- tablish-		Tons of 2,2	40 pounds.				Cost		-
ment num- ber.	Muck bar.	Pig iron.	Serap.	Other.	Mnck bar.	Pig iron.	Scrap.	Other.	Total.
1	12, 965		8,644		\$310,045		\$228, 890		\$538, 935
2	a 6, 571		(a)		a 169, 569		(a)		169, 569
3	1,510		2, 648	25.50	42, 280		60, 425		102, 705
4	a 49, 000		(a)		a977, 184		(a)		977, 184
5		7, 221	2, 993	b 2, 435		\$109, 319	51, 912	b \$15, 487	176, 718
6		4, 507	1,688	b 1, 200		67, 606	28, 696	69,000	105, 302
7	1,453			c 848	46, 899			e 34, 937	81, 836
8	10, 240		-3,412		285, 715		72, 488	002,001	358, 203
9	7, 657		179		210, 652		3, 800		214, 452
10	8, 053		1, 771				49, 635		277, 221
	5, 803		9, 229		138, 537		243, 191		291 795
11	8, 200		491				12, 650		381, 728 242, 777 787, 025
13	17, 576	**********	10,726		486, 697		300, 325	********	797 096
14		(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
	(d)	17, 400	1, 841	b3, 600	4.04	243, 600	22, 500		287, 700
15	9 150		6 301	0 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	95 000	1000 000 000	157 410	b 21, 600	
16	3, 150	*********	6, 384	b 58	85, 000	2 000	157, 412		242, 413
17	*******	231	*******		********	3, 696	********	6347	4, 043
18		347		674		5, 552	**********	6446	5, 998
19		5, 289	1,966 312	b 371	*********	68, 744	36, 783	6.742	106, 269
. 20	4, 060	********	312	*********	109, 291		7, 463	*********	116, 754
21	567	*********	2, 212	*********	16, 816	*******	48, 545	*********	65, 361
22	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
23	3,466	******		********	52, 656	********	********	********	52, 656
24	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
25	e 5, 932	********	(e)	(0)	e110, 561	*********	(e)	(e)	110, 561
26	€ 6, 619	********	(a)	(e)	€ 125, 932			(e)	125, 932
27	e 6, 988		(e)	(e)	e144, 816		(e)	(e)	144, 816
28	4, 608	********		f 110	65, 929	*******	*********	f2, 018	67, 947
29	30, 479			*******	483, 628		********	*********	483, 628

a The quantity and cost of scrap are inseparably combined with the quantity and cost of muck bar.
b Iron ore.
c Reworked muck bar.
d Not reported.
c The quantities and costs of scrap and other material (roughed-down bar) are inseparably combined with the quantity and cost of muck bar.
f Roughed-down bar.

TABLE III.—COST OF PRODUCTION OF FINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

D.--GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments num) ers 1 to 21 are in the United States; numbers 22 to 27 are on the continent of Europe; and numbers 25 to 29 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Estab-		Materials			T- 1000	1000			
lish- ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	\$538, 935	(a)	b\$538, 935	\$90, 783	\$6,500	\$16,088	c\$4,443	\$567	b, d 8657, 316
2	169, 569	\$450	169, 119	33, 147	4, 500	8, 368	3, 231	450	218, 815
3		3, 619	99, 086	20, 881	\$24	4, 965	3, 210	137	127, 103
4	977, 184	7, 400	969, 784	220, 952	25, 233	31, 266	44, 977	2, 200	1, 294, 412
5	176, 718	2, 500	174, 218	109, 825	10,000	19, 830	7,980	1, 458	323, 317
6	105, 302	3,000	102, 302	80, 162	7,500	23, 310	5, 634	1,500	220, 408
7	81, 836	2, 389	79, 447	15, 772	1,825	6, 665	3, 725	1,600	109, 034
8	358, 203	18, 535	339,668	42, 632	5, 271	6, 839	7, 883	1, 127	403, 420
9	214, 452	2,500	211,952	31, 359	5, 500	- 6, 099	4, 111	97	259, 118
10	277, 221	3, 280	273, 941	40, 388	4, 100	9, 312	5, 752	138	333, 631
11	381, 728	9,838	371, 890	41, 599	9, 465	. 18, 484	23,046	2, 946	467, 430
12	242, 777	7, 500	235, 277	28, 884	4, 000	6, 250	6,000	(a)	e 280, 411
13	787, 022	7, 399	779, 623	92, 415	11, 726	58, 353	30, 712	832	973, 661
14	(a)	(a)	(a)	(a)	(a)	(a) -	(a)	(a)	(a)·
15	287, 700	(a)	b 287, 700	219, 450	12, 280	32, 000	28, 660	4, 100	b 584, 890
16	242, 412	4, 805	237, 607	39, 393	3, 600	9, 579	13, 524	- 437	304, 140
17		237	3, 806	2, 404	99	808	557	49	7, 723
18	5, 998	258	5, 740	3, 641	149	1, 114	683	65	11, 392
19	106, 269	2, 120 2, 720	104, 149	85, 056	8, 880	27, 817	21, 646	758	248, 306
20		900	64, 461	21, 708	1, 033 2, 000	4, 397	3, 569 2, 409	720 350	145, 461
		(a)	(a)	(a)	(a)	(0)	(4)	(a)	88, 121
23		2, 563	50, 093	8, 368	831	3, 319	3, 569	317	(a) 66, 497
	(a)	(a)	(4)	(a)	(a)	(a)	(a)	(a)	(4)
	110, 561	8, 179	102, 382	8, 897	f1, 938	1, 268	3, 762	(1)	118, 247
26	125, 932	9, 829	116, 103	9, 920	f1,827	1, 266	2, 975	(1)	132, 091
27	144, 816	12, 466	132, 350	10,662	£2, 136	1,769	3, 086	(1)	150, 003
28	67, 947	874	67, 073	9, 753	143	2, 753	2,571	60	· 82, 353
29	483, 628	19, 792	463, 836	73, 020	3, 459	27, 115	16, 928	2,294	586, 661

s Not reported.

b Value of cinder, scrap, etc., not deducted.
c Supplies only, repairs not included.
d Not including repairs.
e Not including taxes.
£ The expenditures for taxes are inseparably combined with these for officials and cle

Table III.—COST OF PRODUCTION OF PINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

E. FLENENTS OF COST IN ONE TON OF 2.240 POUNDS.

[Establishments new tern I to 21 are in the United States; numbers 22 to 22 are on the coefficient of Enrype, and numbers 23 and 29 are in Great Britana. Insurance, ancress, depreciation of value of plant, and charges for freight of product to place of free delivery, are not included.]

(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		98.362 -76 -563 -563	90. \$170 1. 202 1. 203 1. 205 1. 406		- !	Total. 3.4504. 628 57. 315 58. 352 20. 419
(1) (1) (2) (3) (4) (4) (5) (6) (6) (6) (6) (6) (6) (6) (6		98.362 -375 -376 -360 -1677	98. \$17.0 1. 2023 1. 2025 1. 2025 1. 2026 1. 2026 1. 2026	.33. 3.8 1.65. 20.1	.67.	37. 315 33. 352 36. 419
(1) (1) (2) (3) (4) (4) (5) (6) (6) (6) (6) (6) (6) (6) (6		.56 .56 1.65	1 XX	.33. 3.8 1.65. 20.1	.67.	37. 315 33. 352 36. 419
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			.35	. 754		117 22
	1177		231	i =	. 63	32.857
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37.334 37.334	4 1 SC	9.373	. 300	. 530	- 181	34, 197
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	13	21,554 1,673 21,734 1,557 21,734 1,562 17,600 2,554	21.734 1.557 m.34. 22.114 1.562 m.373 17.500 2.536 .437	71.551 1.673 a.462 1.907 71.734 1.557 a.341 1.937 73.714 1.562 a.373 1.380	21.554 1.673 m.166* (SET 1.79* 21.474 1.557 m.134. (277 1.557 21.474 1.562 m.177 1390 1390 17.590 1.556 1.477 1722 1.675	21.556 1.673 m.460 (SET 1792 (m) 21.716 1.557 m.361 (SET 1.557 (m) 21.716 1.557 (m) 21.716 1.562 m.373 (SEC 1.557 (m) 21.716 1.555 (m) 21.716 1.555 (sEC 1

a Not reported.

5 Value of cinder, scrap, etc., not deducted.
c Supplies only, repairs not included.
d Not including repairs.
d The expenditures for scrap are inseparably combined with those for muck bar,
f Iron ore.
g Reworked muck bar.
A Not including taxes.
i The expenditures for taxes, insurance, and interest are inseparably combined with those for officials and cierks.

j Including insurance and interest.
d The expenditures for taxes and insurance are inseparably combined with those for offiderits.

orers

I including insurance.

Including insurance.

In English down but.

In English down but.

In Expenditures for taxes are inseparably combined with those for efficials and clerks.

TABLE 111.—COST OF PRODUCTION OF FINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

F.—PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 21 are in the United States; numbers 22 to 27 are on the continent of Europe; and numbers 22 and 22 are in Great Sritain. This table is based on the preceding one, and to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader is referred to that table for such information as they furnish.]

Estab- lishment number-	Materials (net).	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	81.90 77.95 74.92 546.42 72.90 81.80 82.80 82.80 72.56 83.90 77.8.65 84.94 78.13 49.23 41.94 73.15 73.15 73.33 86.53 87.93 88.53	13. 81 15. 15 16. 42 17. 07 33. 97 36. 37 14. 46 10. 57 12. 10 12. 10 10. 30 11. 86 37. 75 31. 96 34. 26 14. 92 16. 12 16. 12 16. 12 7. 76 7. 76 7. 76 7. 76	.99 2.05 1.95 2.19 3.40 1.81 2.12 1.20 2.14 2.16 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1	2.45 2.42 2.42 10.57 6.169 2.25 2.25 2.25 2.29 2.647 2.15 9.78 11.20 2.53 2.499 2.499 2.499 2.499	. 67 1. 48 2. 47 2. 56 2. 42 2. 56 2. 1. 59 1. 59 1. 59 2. 14 4. 49 4. 45 7. 21 2. 45 2. 4	.00 .21 .11 .17 .45 .68 1.47 .28 .04 .63 .09	100 100 100 100 100 100 100 100 100 100
28 29	81. 15 79. 06	11.84 12.45	. 17	7.63 3.84	3. 12 2. 89	. 08 . 39	100 100

H. Ex. 265---9

TABLE III.—COST OF PRODUCTION OF FINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

G.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1 to 21 are in the United States; numbers 22 to 27 are on the continent of Europe; and numbers 28 and 29 are in Great Britain.]

.	Additional cost.						
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.			
	\$945 400 22 700 321 500 230 400 125 245 733 400 1,120 (a) 2,000 317 27 30	(a) (a) 8.267 1, 221 (a) (a) (b) (c) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	\$2, 661 2, 500 (6) (6) (5)	\$3, 266 400 20 5 700 3 497 4, 262 2, 622 73, 400 11, 311 231 6, 60			
3	312 150 (a) 817 (a)	30, 584		73 15 (a) 31 (a)			

a Not reported.

Not including interest.
Not including interest and depreciation of value of plant.

TABLE III.—COST OF PRODUCTION OF FINISHED BAR IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 21 are in the United States; numbers 22 to 27 are on the continent of Europe; and numbers 28 and 29 are in Great Britain.]

		Additional	cost per ton.	•
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
1	\$0.045 .068 .006 .016 .033 .078 .109 .032 .016 .028 .033 .051 .045 (a) .119 .036 .136 .101 .132 .078 .059 (a)	(a) (a) (b) (a) (c) (c) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d)	(a) (a) (b) (c) (c)	\$0. 172 .058 .066 b.016 .033 .078 1. 665 .314 .342 .023 .053 .051 .045 (a) 1. 280 .791 1. 118 .183 .059 (a)
27 28 29	.014	1. 269		1. 283

<sup>Not reported.
Not including interest.
Not including interest and depreciation of value of plant.</sup>

SUMMARY OF COST OF FINISHED BAR IRON (RUN OF MILL) IN TEN ESTABLISHMENTS IN THE UNITED STATES.

[This summary is drawn from sub-tables A to H immediately preceding. The establishments covered are numbers 1, 2, 4, 7 to 10, inclusive, 12, 13, and 20 and are those only in which muck bar iron is the principal material used. As may be seen the periods covered are usually twelve months and are in the years 1888, 1889, and 1890. By run of mill is meant the product of all kinds of finished bar iron made in an establishment.]

		Tons of 2,240 pounds.			
Elements of cost.	Cost of 185, 027.	Average cost of one.			
Materials (net). Labor. Officials and clerks.		\$3, 711, 780 618, 040 69, 688	\$27, 489 4, 577		
Fuel Supplies and repairs Taxes		153, 637	.516 1.138 .848 .057		
Total		4, 675, 279	34, 625		

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

(All ten establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Four establishments gave the amount paid for interest; the aggregate of these makes the sum below. Five reported that there was no expenditure for interest, and for one no statement was obtained. Two establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Eight reported that nothing was charged to this item. The aggregates entered in the first column below are, of course, apportioned in the second column among the whole ten establishments.)

Insurance	7, 828	90, 036 , 054
Depreciation of value of plant	5, 161	. 038
Total	17, 261	. 128

SUMMARY OF COST OF FINISHED BAR IRON (RUN OF MILL) IN FOUR ESTABLISHMENTS ON THE CONTINENT OF EUROPE.

[This summary is drawn from the preceding sub-tables A to H. The establishments covered are numbers 23 and 25 to 27, inclusive, being all the finished bar iron mills on the continent of Europe from which full reports were obtained. In all these establishments muck bar iron is the principal material used. As may be seen the periods covered are irregular and are in the year 1889. By run of mill is meant the product of all kinds of finished bar iron made in an establishment.]

	Tons of 2,	Tons of 2,240 pounds.		
Elements of cost.	Cost of 18,762.	Average cost of one.		
Materials (pet)	\$400, 928 37, 847	\$31.369 2.017		
Officials and clerks	a 7, 049 7, 622	6.376 .406		
Supplies and repairs	13, 392 (a)	(a) .714		
Total	466, 838	24, 882		

BUNMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[One establishment gave the amount paid for insurance, which makes the sum credited to this item below. Three reported that they had no insurance. All four establishments reported that there was no expenditure for interest, and that nothing was charged to depreciation. The sum entered in the first column below is, of course, apportioned in the second column among the whole four establishments.]

Insurance		
Depreciation of value of plant		
Total	317	. 017

s The expenditures for taxes are inseparably combined with those for efficials and elerks,

SUMMARY OF COST OF FINISHED BAR IRON (RUN OF MILL) IN TWO ESTABLISHMENTS IN CREAT BRITAIN.

[This summary is drawn from the preceding sub-tables A to H. The establishments covered are numbers 28 and 29, being all the finished bar iron mills in Great Britain from which reports were obtained. In both these establishments muck bar iron is the principal material used. As may be seen the periods covered are irregular and are in the years 1888 and 1889. By run of mill is meant the product of all kinds of finished bar iron made in an establishment.

	Tons of 2,240 pounds.			
Elements of cost.	Cost of 27,905.	Average cost of one.		
Materials (net) Labor Officials and clorks. Fuel	29, 868	\$19.626 2.967 .129 1.070		
Supplies and repairs	2, 354	.084		
Total	669, 014	23. 975		

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[One establishment gave the amount paid for insurance, which makes the sum credited to this item below. One reported that it had no insurance. One establishment gave the amount paid for interest, which makes the sum below. One reported that there was no expenditure for interest. Both establishments reported that nothing was charged to depreciation. The sums entered in the first column below are, of course, apportioned in the second column between the two establishments.]

Insurance		\$0. 012 1. 096	
Depreciation of value of plant		1, 100	
	1.,	1	

These tables relate to a mixture of various kinds of finished bar iron, as stated in the notes. For the United States, as shown 'y ten establishments, finished bar iron costs \$34.625, and if the theoretical elements of cost—insurance, interest, and depreciation of value of plant—be added, the figures would be increased only 12.8 cents. The cost of finished bar iron on the continent of Europe, as shown by four establishments, is \$24.882, and the additional cost, as given by the establishments returning theoretical elements, is 1.7 cent. For Great Britain, as shown by two representative establishments, the average cost of one ton of finished bar iron for the two establishments is \$23.975; one establishment, however, added insurance and interest on a very liberal scale, the addition amounting to \$1.108 per ton.

LABOR COST PER TON OF MAKING FINISHED BAR IRON IN GREAT BRITAIN.

The following table shows the labor cost per ton of making finished bar iron in a well known establishment in Great Britain for various periods from 1877 to 1890, inclusive. By labor cost in the succeeding table is meant the cost of converting pig iron into finished bar, the direct labor cost in the processes preceding not being included. These costs relate to a well known establishment, and were made up for the information of the head of the firm.

LABOR COST PER TON OF MAKING FINISHED BAR IRON AT A WELL KNOWN WORKS IN GREAT BRITAIN.

[The labor cost here shown is on the production for the month without regard to sizes or kinds of con turned out. The tonnage rate paid rollers, etc., varies greatly, perhaps fifty different rates being sid, as the product includes various sizes, kinds, and weights, the separate labor cost for each kind of being made up.]

Month.	1877.	1878.	1879.	1880.	1881.	1882.	1887.	1888.	1889.	1890.
January	\$3, 541	\$3,305	\$3,210	\$3, 428	\$3, 292	\$2,958	\$3.105	\$2,555	\$2,705	\$3,559
February	3, 328	3, 098	2 955	3, 243	3, 260	3, 213	2,774	2, 663	2,617	3, 733
March	2, 995	3, 189	2, 870	3, 277	3, 244	3, 287	2, 816	2, 937	2,738	3, 803
April	3, 247	3, 267	2.817	3. 227	3, 104	3. 387	3, 090	3.068	2,730	d4.016
May	3, 197	3, 249	3, 005	3. 344	3,001	3, 352	3, 141	3,066	2,790	
June	3, 239	3, 054	3, 135	3, 428	3, 182	3, 333	3, 029	3, 094	2, 947	
July	3, 191	3, 103	3, 053	3, 430	2, 995	3, 335	3,018	3, 022	3,070	
August	3, 264	3, 059	2, 966	3, 404	3. 104	3, 369	3, 124	2.012	63,575	
Suplomber	3, 246	3, 090	3, 120	3, 446	3, 029	3, 227	2,950	2, 812	3, 179	
Opiober	3, 440	3, 002	3, 073	3, 439	3, 005	(a)	2,740	2.675	3, 138	
November	3, 273	3, 212	2. 875	3,625	2.973	(a)	2,723	5, 617	3, 232	
December	3, 303	3, 181	3, 050	3, 365	2. 964	(a)	2.652	2. 737	c 3. 845	
Average	3, 272	3, 158	3.011	3.388	3.096	3, 273	2 930	2.847	3.047	3, 778

e books containing costs for this month were lost or mislaid. lidays and consequent small production increased labor cost this month. used advanced in wages.

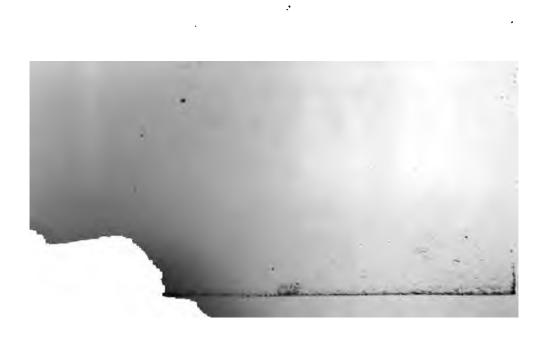
PRICES OF FINISHED BAR IRON.

The following table shows the average monthly wholesale prices of best refined rolled bar iron at Philadelphia, for each month from January, 1844, to December, 1889. It is taken from the annual report for 1889 of the American Iron and Steel Association.

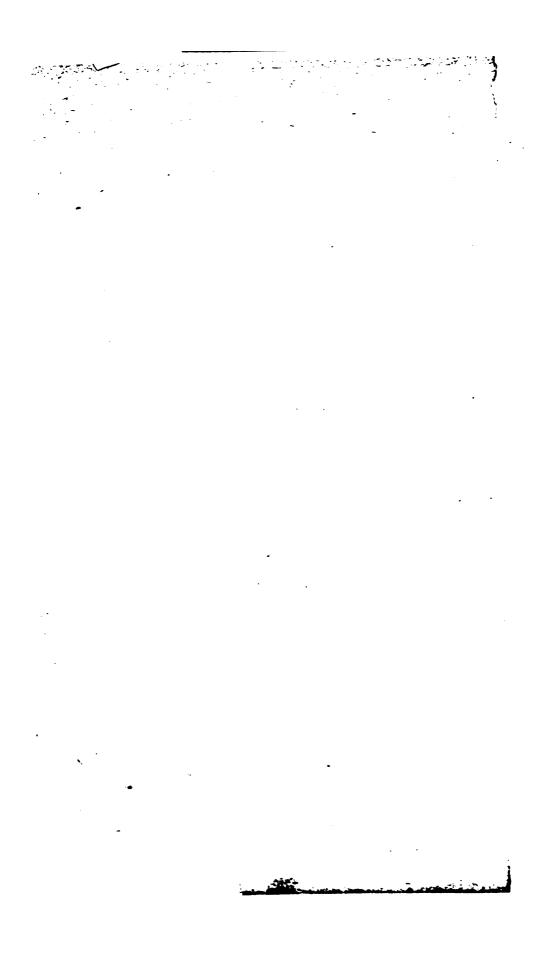
AVERAGE WHOLESALE STORE PRICES PER TON OF 2.240 POUNDS OF BEST REFINED ROLLED BAR IRON AT PHILADELPHIA.

Y'r.	Jan.	Feb.	Mar.	A pril.	Мау.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Avor-
1841	290.00	\$90.00	\$90.00	89 0. 00	\$90.00	\$ 82, 50	\$82.50	\$82, 50	\$82, 50	±82. 50	\$82, 50	\$82.50	\$85, 62
1845	82, 50	87. 50	92 50	100.00	100.00	100.00	93, 00	92.50	92. 50	92.50	95, 00	95. 00	93, 75
1846	95.00	95.00	90.00	92. 50	92.50	92. 50	95. 00	92.50	90.00	90.00	90.00	85, 00	91.66
1817	85.00	85. 00	85. 00	85.00	85. 00	90.00	90.00	85. 00	87. 50	85. 00	85. 00	85.00	86.04
1818	85.00	85. 00	85. 00	85. 00	85. 00	80.00	80.00	80.00	73.00	75.00	67. 50	70.00	79.38
1849	70.00	70.00	70.00	70.00	70.00	70.00	65.00	65.00	45. UO	65. 60	65.00	65. 00	67. 50
1850	65.00	65.00	85.00	62. 50	60.00	57. 50	57. 50	57.50	57.50	56,00	56. 00	55, 00	59.54
1851	55, 00	55. 00	55.00	55. 00	55. 00	55. 00	55.00	55, 00	54.00	54.00	54.00	54.00	54.66
1852	54, 00	54. 00	52. 50	52 50	52.50	52. 59	52. 50	55.00	60.00	70.00	70.00	80,00	58.79
1853	90.00	90, 00	90.00	87. 50	85.00	80. ∩0	80.00	77.50	77. 50	80.00	80.00	85. 00	83.50
1854	90,00	90.00	90,00	90.00	90.00	92. 50	95.00	93.00	95.00	92, 50	90. 00	90.00	91.23
1855	82. 50	80.00	75.00	72. 50	70.00	70.00	70.00	72. 50	72.50	75. 00	77.50	77.50	74. 58
1856	75.00	77. 50	77. 50	77.50	75.00	72.50	70.00	70.00	72.50	72. 50	72, 50	72.50	78, 75
1857	72. 50	72. 50	72. 50	72.50	72.50	72. 50	70.00	70.00	70.00	70.00	70.00	67. 50	71.04
1.958	65. 00	65. 00	65.00	62.50	62. 50	65.00	62.50	60.00	60.00	60.00	60.00	60.00	62, 29
1859	60.00	6U. 00	GO. 00	60.00	60.00	60.00	60.00	60.00	60,00	60.00	60.00	60.00	60, 00
1860	60.00	57. 50	57. 50	57. 50	57.50	57. 50	57. 50	60.00	60.00	60, 00	60.00	60, 00	58.75
1861	60.00	60.00	60.00	60.00	60.00	60.00	60. 00	60.00	62. 50	62, 50	62, 50	62. 50	60.83
1862	62.50	62.50	62. 50	62, 50	65. 00	65.00	70.00	72.50	75.00	77.50	82. 50	87.50	70. 13
1863	87. 50	90,00	90.00	90.00	90.00	87. 50	87. 50	87. 50	87. 50	90. 00	95. 00	110.00	91.04
1861	115.00	125.00	130.00	140 00	150.00	160, 00	165. 00	170.00	160.00	150.00	147. 50	145.00	146.46
1865	142.50	135. co	130.00	110.00	100.00	92, 50	90, 00	85, 00	92, 50	95. 00	100.00	105.00	106.38
1866	105.00	100. 00	97. 50	95.00	92. 50	95.00	105.00	100.00	100.00	97, 50	95.00	95.00	98. 13
1867	95.00	92. 50	92.50	90.00	87. 50	87. 50	85. 00	82.50	82. 50	82.50	82.50	85. 00	87.08
1968	85.00	85. 00	85. 00	87. 50	87. 50	87. 50	85.00	83, 00	85. 00	85.00	85.00	85. 00	85. 63
1869	82, 50	82.50	82. 50	82.50	82.50	82.50	82. 50	82. 50	80.00	80.00	80.00	80.00	81.66
1870	80.00	77.50	77. 50	77. 50	75.00	77. 50	80.00	85.00	82. 50	80.00	77. 50	77. 50	78.96
1871	72. 50	75.00	75.00	77. 50	75.00	77. 50	77.50	80.00	82.50	82, 50	82. 50	85. 00	78.54
1872	73. 92	78. 40	87. 36	94.08	96. 32	98. 56	103. 04	105, 28	107. 52	118.72	107. 52	100.80	97. 63
1873	96.32	94 08	96. 33	94. 08	94.08	91.84	85. 12	82. 88	80. 64	76. 16	73. 92	71.68	86. 43
1874	73.92	73. 92	71.68	71.68	67. 20	67. 20	62, 72	67. 20	67. 20	67.20	62. 72	62. 72	67. 95
1875	62, 72	60.48	62.72	62.72	62. 72	62.72	62. 72	60. 48	60.48	60. 48	56.00	36.00	60. 85
1876	56.00	52.64	52. 64	52. 61 44. 80	52.64	52. 64	52.64	52. 64 44. 80	50.40	50. 40 44. 80	50. 40	49. 28	52.08
1877	48. 72	47. 60	47.04	44.80	44.80	44.80	44, 80	44. 80	44. 80	42.56	44.80	44. 80	45, 55
1878	44. 80	44.80						49. 28	57.12	67. 20	67. 20	72. 24	44.24
1879	40. 32 80. 64	42.56 85.12	44 80 82, 32	44.80 71.68	144. 80 56. 00	44. 80 51. 07	47.04 50.02	53. 76	54.88	52.64	52, 64	53. 76	51. 85 60. 38
1880			56.00	56,00	53.76	53.76	54. 88	57. 12	60, 48	62.72	64. 96	64.96	58, 05
1881 1882	56.00 64.96	56.00 67.20	67. 20	62. 72	53. 76	60. 48	60, 48	60.48	60. 48	6). 48	58. 24	56.00	61.41
1883	53.76	52.64	51. 52	50. 40	50.40	50.40	50.40	49. 28	49. 28	49. 28	49. 28	47.04	50, 30
1884		44. 80	44. 80	44. 80	44. 80	14. 80	44. 80	44. 80	42. 56	42.56	42. 56	42.56	44. 05
1885	41.80	40.32	40. 32	40.32	40.32	40. 32	40.32	40. 32	40. 32	40. 32	40. 32	40. 32	40. 32
1886	41.44	42.56	42, 56	42, 56	42.56	42.56	42. 56	42.56	43. 68	44. 80	44. 80	44. 80	43. 13
1887	48.16	50. 40	51.52	51. 52	51. 52	49. 28	49. 28	49. 28	49. 28	48. 16	47.04	47. 04	49.37
1888	49. 28	49. 28	47.04	43. 68	42, 56	41.44	42. 56	42.56	44. 80	17. 04	44. 80	44.80	44. 99
1889	44. 80	42.56	40.32	40. 32	11. H	42.56	42.56	43.68	43. 68	44. 80	45. 93	48, 16	43.40
1909	72.00	1 22 30	1 -3.03	13.02	1	1 -5. 50		1		1	1	1	

The highest price in any month in the above table was reached in August, 1864, \$170; the lowest price in January, 1879, throughout 1865, and in March and April, 1889, \$40.32.



MISCELLANEOUS IRON.



MISCELLANEOUS IRON

The titles of Table IV and its sub-tables are as follows:

Table IV.—Cost of Production of Miscellaneous Iron at Various Establishments in Various States.

- A.—Period covered and quantity of product.
- B.—Quantity and cost of materials used.
- C.—Proportions of materials used.
- D .- General statement of cost for the period.
- E.—Elements of cost in one ton of 2,240 pounds.
- F.-Per cent. of each element of cost in one ton of 2,240 pounds.
- G.—Additional cost of certain theoretical elements.
- H.-Additional cost of certain theoretical elements in one ton of 2,240 pounds.

In these tables are shown the costs of certain miscellaneous iron products such as beams, plates, rails, sheet iron, etc. In most cases an establishment produces several different articles of numerous sizes, and the cost is for the mixed product. The leading product is that mentioned in the column of description; sometimes that is the only product though there may be several sizes. Of course, the results would have been much more valuable if the facts for each particular article or size had been shown separately, but the account books of the establishments would not allow of this. Manufacturers in this line of products do not devote themselves to specialties to an extent that would permit definite units to be selected for investigation; still the results are likely to have a certain value sufficient to warrant their presentation here.

The tables need very little explanation. Note should be taken of the varying materials used for obtaining a like product as this may affect not only the total cost, but the sub-division of cost between labor and materials. For instance, establishment number 15 uses muck bar iron to make ship and boiler plates. Of course there will be a very low cost for labor here compared with establishments 12, 13, and 14 which use pig iron and iron ore.

BOR.

TESABLLANEOUS IBON AT

7 7 3

___ _ PRODUCT.

•	Tons of pour		Trains of
- Seamption.	Total.	Per day.	rolls.
Pure and plates Sure (half finished)		124 (a)	(4)
has their finished has duit finished has coughed down has coughed down	1, 798 (a) 10, 901	(a) (a) (a) 37 (a)	(a) (a) (a)
Plans reginary	. 27 157 14,060 (a)	94 48 (a) (a)	(a) (a) (a)
Places baller)	- 50 800	20 10 73 101	3 1 2 (a)
Shoot Fon	435 726 8, 189	7 8 14 41 (a)	5 5 2 (4)

a The terminal dates are not reported

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

B.—QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain.]

Ea-		Tons of 2,2	40 pounds		Cost.					
lish- ment num- ber.	Muck bar.	Pig iron.	Scrap.	Other.	Muck bar.	Pig iron.	Scrap.	Other.	Total.	
1 2 3 4 5 6 7 8	61,613 61,664 61,929 (c) 7,929 (c) 634,611	(c)	2, 250 (b) (b) (b) (c) 7, 505 (c)	(c) (d3)6 (c) (d550	\$28, 418 31, 407 36, 927 (c) 128, 283 (c) e 586, 657	\$286, 250 (c)	\$39, 375 384 385 554 (c) 77, 264 (c) 4, 439	(c) d6,716 (c) d9,326	\$342, 357 28, 502 31, 792 37, 481 (c) 212, 263 (c) 600 422	
10	e 15, 133 (c)	(c)	3, 521 (c)	d 251 (c)	e 258, 750 (c)	(e)	36, 245 (c)	d 4, 261 (c)	299, 256 (c)	
11 12 13	(c)	252 63	(c)	(c) (f) a 12 a 200	(c)	(c) 3,780 1,000 16,000	(c)	a 363 a 70 a 1, 200	(c) 4, 143 1, 070 17, 200	
14 15 16	16, 332	1,000	636 31 74	d 252	263, 936	2, 346 9, 537	7, 166 539 2, 189	d 3, 709 a 182 a 738	274, 831 3, 067	
17 18 19 20	8, 911 (c)	544 907	123 (c)	(c)	249, 741 (c)	15, 918 (c)	3, 654	a 1, 234	12, 464 20, 806 249, 741 (c)	

a Iron ore.

b The quantity of scrap is inseparably combined with the quantity of muck bar.

e Not reported.

d Old rails.

e Muck bar and roughed down bar.

f Iron ore is used, but the quantity is not reported.

140 Table IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT.

Es-		Period covered.		Miscellaneous iro	ced.		
tab- lish- ment	Locality.	Terminal dates.			Tons of	7 2,240 ids.	Trains of
ber.		Terminal dates.	run- ning time.	Description.	Total.	Per day.	rolls.
1 2	United States. Continent of Europe.	Aug. 11, 1888, to Aug. 10, 1889 Apr. 1, 1889, to June 30, 1869	152 (a)	Bars and plates Bars (half finished)	18, 872 1, 449	124 (a)	(a)
3	do	July 1, 1889, to Sept. 30, 1889	(a)	Bars (half finished).	1, 494	(a)	(a)
- 4	do	Oct. 1, 1889, to Dec. 31, 1889	(a)	Bars (half finished).	1, 798	(a)	(a)
5	do	1889 (b)	(a)	Bars(roughed-down)	(a)	(a)	(a)
6	do		295	Bars(roughed-down)	10, 901	37	1
7	do		(a)	Beams	(a)	(a)	(a)
8	do	Jan. 1, 1889, to Dec. 31, 1889	290	Beams, plates, eto	27. 157	94	1
9	do	Jan. 1, 1889, to Dec. 31, 1889	295	Beams, rails, etc	14,060	48	1
10	do	1×89 (b)	(a)	Plates	(a)	(a)	(a)
11	do	1889 (b)	(a)	Plates (ordinary quality).	(a)	(a)	(a)
12	United States		11	Plates (boiler)	225	20	3
13	do	June 3, 1889, to June 7, 1889	5	Plates (fine)	50	10	1
14	do	Jan. 1, 1889, to Jan. 14, 1889	11	Plates (tank)	800	73	2
15	Great Britain.	Jan. 1, 1889, to June 30, 1889	137	Plates (boiler, ship, etc.)	13, 823	101	(a)
16	United States.		15	Sheet iron	107	7	
17	do	July 1, 1889, to Sept. 30, 1889	54	Sheet iron		8	
18	do	July 1, 1889, to Dec. 31, 1889	51	Sheet iron	726	14	1
19	do	Jan. 1, 1889, to Dec. 31, 1889	198	Skelp iron	8, 189	41	1 2
20	Continent of Europe.	1889 (b)	(a)	Slabs	(a)	(a)	(4)

a Not reported.

è The terminal dates are not reported.

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

B.-QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain.]

Es-		Tons of 2,2	40 pounds.		. Cost.						
lish- ment num- ber.	Muck bar.	Pig iron.	Scrap.	Other.	Muck bar.	Pig iron.	Scrap	Other.	Total.		
1 2	b 1, 613	17, 850	2, 250	a 3, 187	\$28, 418	\$286, 250	\$39,375 384	a \$16, 732	\$342, 357 28, 80		
3	b 1, 664		(b) (b)		31, 407	********	385		31, 793		
4	b 1, 929	*********	(b)		36, 927		554	*******	37, 481		
5	(0)	(c)	(c)	(c)	(0)	(c)	(c)	(c)	(c)		
6	7,929	*******	7, 505	d 336	128, 283	*******	77, 264	46,716	212, 263		
7	(c)	(c)	(c)	(0)	(c)	(c)	(e)	(c)	(c)		
8	e 34, 611	********	431	d 550	e 586, 657	********	4, 439	d9, 326	600 423		
9	e 15, 133	*********	3, 521	d 251	e 258, 750	********	36, 245	d4, 281	299, 256		
10	(c)	(c)	(c)	(0)	(c)	(0)	(c)	(c)	(c)		
11	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)		
12	******	252	*******	S		3, 780		a 363	4, 143		
13		63		a 12		1,000		a 70	1, 070		
14		1,000		a 200		16, 000	*******	a1, 200	17, 200		
15	16, 332		636	d 252	263, 956		7, 166	d 3, 709	274, 831		
16	*********	134	31	S		2, 346	539	a 182	3, 967		
17		544	74	(n)		9, 537	2, 189	a 738	12, 464		
18		907	123	a 206		15, 918	3, 654	a 1, 234	20, 806		
19	8, 911	*********	*******	*********	249, 741				249, 741		
20	(0)	(c)	(c)	(c)	(c)	(c)	(c)	(c)	(c)		

<sup>Tron ore.
The quantity of scrap is inseparably combined with the quantity of muck bar.
Not reported.
Old rails.
Muck bar and roughed-down bar.
Iron ore is used, but the quantity is not reported.</sup>

142 -REPORT OF THE COMMISSIONER OF LABOR.

Table IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

C.-PROPORTIONS OF MATERIALS USED.

(Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain.)

Es-	Pounds o	f materials t	o one ton o	f product.	Cost of materials per ton of 2,240 pounds.					
nest nest num	Yuck bar.	Pig iron.	Scrap.	Other.	Muck bar.	Pig iron.	8сгар.	Other.		
1		2, 119	` 267	4 378		\$16, 636		e 83, 250		
3	8 2, 494		(b)		b \$17. K56		-31	·		
3	ð <u>195</u>		(b)		b 19. 106					
Ă١	9 = 403		(b)	l	b 19, 430	'	,3)			
S i	(e)	(6)	(c)	(6)	(e)	(e) .		61		
٠ě١	ì, 629		1,542	481	16,179		:4.393	d : 6. 960		
Ť	(e)	(6)	(6)	(e)	(e)	(4)		£)		
١	e 2, 855		` 36	``d 45	e 16.950		:4. SS	d 14. 934		
- š l	2 411		561	2 40	e 17. 006		:1.234	4:4.976		
10	(e)	(0)	(e)	(c)	(c)	· · · · · ·	V 7	\$1		
ii!	(c)	(e)	(6)	(c)			- 47			
12		2, 509		l ửi		15. NW		, ,		
13		2, 822		4 528		22.973		a 5. 833		
14		2, 800		a 500		25. (4)		4 1 100		
15	2 646		103	241	16.75		:: 3	8 14, 718		
16		2,805	619	ທີ່		- M	= =			
17		2,801	381	l ŏń		- 22	3 5			
18		2,800	390	4 404			37	a 5. 200		
19	2 437		!		3.5					
3	(e)	(e)	(c)	(c)	15	-	47	2)		

<sup>a Iron ore.
b The quantity and cost of scrap are inseparably combined with the quantity and make here.
c Not reported.
d Old rails.
e Muck bar and roughed-down bar.
f Iron ore is used, but nother the quantity par the nest per use a reported.</sup>

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

D. -GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Ea-		Materials.		5					
lish- ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	\$342, 357	\$39, 375		a \$221, 063	\$15,000	\$32, 214		\$5, 543	\$598, 447
1 2 3 4 5 6 7 8 9	28, 802	804 825	27, 998	1, 727 1, 793	b 501	384	1, 148	(6)	31, 848
3	31, 792 37, 481	1,451	36, 030		b 511 b 671	559	832 967	(b) (b)	34, 474 40, 347
6	(0)	(c)	(c)	(c)	(c)	(c)	(c)	(0)	(c)
6	212, 263	28, 016	184, 247	10, 237	1,016	10,061	6, 579	403	212, 546
7	(c)	(c)	(c)	(c)	(e)	(0)	(c)	(c)	(c)
8	600, 422	51, 162	549, 260	34, 689	2, 283	25, 136		1,004	639, 849
9	299, 256		271,770	18, 117	1, 355	13, 013		520	316, 983
10	(c)	(c)	(c)	(c)	(c) (e)	(c)	(0)	(c)	(c)
11	(c)	(0)	(c)	(0)	(c)	(c)	(6)	(c)	(e)
12	4, 143	45 68	4, 098 1, 002	a 2, 182 a 674	234 50	625 275	405 200	45 20	7, 589
14	1,070 17,200	(c) 00	d 17, 200	a 8, 800	200	4, 200		240	d 33, 410
15	274, 831	8, 720	266, 111	46, 019	940	19, 589		- 180	345, 099
16	3, 067	120	2, 947	a 2, 332	186	854	485	11	6, 815
17	12, 461	488	31, 978	a 9, 362	755	3, 450		42	27, 561
18	20, 806		19, 992	a 13, 779	1, 260	5, 794	3, 291	71	44, 187
19	249, 741	18, 145	231, 596	34, 732	5, 450	10, 873	6, 904	97	289, 652
20	(c)	(0)	(c)	(c)	(c)	(0)	(c)	(c)	(c)

. e %.}

<sup>The high cost for labor is due to using pig iron and ore.
The expenditures for taxes are inseparably combined with those for officials ard clerks.
Not reported.
Includes value of cinder, sorap, etc., produced during the period.</sup>

REPORT OF THE COMMISSIONER OF LABOR.

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

E.—ELEMENTS OF COST IN ONE TON OF 2,340 POUNDS.

[Establishments numbers 1, 12 to 14 and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Estab.		Materiale.											
Heb- ment		Grees.					Valne of		Offi- cials and	Fuel.		Taxes Total.	
ber.	Muck bar.	Pig iron.	Scrap.	Other.	Total.	cin- der, ecrap, etc.	Net.		cì 'ka.		re- pairs.		
1		\$15. 168	\$2.086	a90.867	\$18. 141	\$2,086	\$16.055	6411. 714	80, 795	\$1, 707	\$1, 147	80, 293	\$31, 711
3	\$19. J12		. 265		19. 877	.555	19. 322		c. 408				21. 979
8	21.022		. 258		21. 280		20. 72H		e. 342				23. 075
4	20, 538		. 306	•••	20, 846	. 807	20. 039				. 538		22, 440
ž · · · ·	(d) 11. 769	(d)	(d) 7,087	(d) f. 616	(d) 19.472	(d) 2.570	21. 432 16. 902		(d) . 093	. 863 . 923	. 99A . 604		624.921 19.498
7	(d)	(d)	(4)).010 (a)	(d)	(d)	15. 099	2.781					19. 196 A 20. 242
8	121. 602		. 164	1.343	22, 109	1. 884	20, 223		. 084		1.012		
9	£18, 403		2.578				19. 329	1.260	. 096				
10	(d)	(d)	(d)	(d)	(d)	(d)	30.982	1.863	g. 863				A 35. 900
11	(d)	(d)	(d)	(d)	(d)	(d)	28. 335	1.863				(0)	A 33. 119
13		16.800		a 1. 613			18. 213	<i>b</i> 0. 008			1. 800		
18	•••••	20.000	•••••	a 1. 400	21, 400		20. 040						
14		20.000		a 1. 500	21. 500 19. 875		£21.500	\$11.000 2.328	. 250				k41.800
15	19.068	21, 925	. 518 E 058		28. 661	. 631 1. 121	19. 244 27. 543		1.73		. 847 4. 533	.013	
17		21. 924		41.007			27. 531	b21.522			4. 512		63, 6 /2 63, 359
18		21. 925		a 1. 700			27. 537				4, 532		60. 8GL
19	20. 497				30. 497	2.216	28. 281	4, 241	. 646		. 843		
20	(d)	(d)	(d)	(d)	(d)	(d)	16. 511		(d)	. 778			¢ 19. 621

a Iron ore.

The high cost for labor is due to using pig iron and ore.

The expenditures for taxes are inseparably combined with those for officials and clerks.

Not reported.

Not including officials and clerks and taxes.

Old rails.

 $_{f}$ User zails. $_{g}$ The expenditures for taxes and insurance are inseparably combined with those for officials and elerks.

ierts.

À Including insurance.

﴿ Muck bar and roughed-down bar.

À Includes value of cinder, scrap, etc., produced during the period per ton of product.

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TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN MARIOUS STATES—Continued.

F.-PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1, 12 to 14, and 16 to 10 are in the United States; numbers 2 to 11, and 20 are on the continents (Europe; and number 15 is in Great Britain. This table is based on the preceding one, and to avoid duplicating the notes, which would be the same in substance, they are here omitted and the reader is referred to that table for such information as they furnish.]

Estal- lishment number.	Materials (not).	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	50. 63	36. 94	2.51	5. 38	3. 62	.92	100
2	87. 91	5. 42	1.86	1.21	2, 60		100
3	89, 83	5. 20	1.48	1.08	2.41		100
4	89, 30	5. 25	1.66	1.30	2.40		100
5	86.00	6. 53		2.46	4.01		100
6	86.68	4, 82	.48	4.73	3. 10	. 19	100
7	74.50	18, 75	8.34	1.39	4, 93		100
8	85, 84	5. 42	. 36	3, 93	4. 29	.16	100
9	85, 73	5. 72	.43	4.11	3. 85	.16	100
10	86, 30	5. 19	2.40	3.44	2, 67		100
11	85, 55	5. 63	2.61	3.73	2.48		100
12	54, 00	28, 75	3.08	8, 24	5. 34	. 59	100
12	45, 11	30. 35	2, 25	12.38	9. 01	.90	100
14	51, 43	26, 32	. 60	12.56	8. 37	.72	100
15	77.11	13. 34	. 27	5. 63	3, 55	.05	100
16	43. 24	34, 22	2.78	12, 58	7. 12	.16	100
17	43, 45	33, 97	2.74	12. 52	7. 17	.15	100
18	45, 25	31. 18	2.85	13.11	7.45	.16	100
19	79. 96	11. 99	1.88	2,76	2, 38	.03	100
20	84, 15	6, 90		2, 95	5,00		100

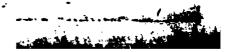
H. Ex. 265---10

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

G .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain.]

	Additional cost.							
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.				
	\$2,088	(a)	(a)	b \$2, US				
	(a)	(a)	(a)	(a)				
	(a)	(a)	(a)	(a)				
	(a)	(a)	(a)	(a)				
 	(a) 27	(a)	(a)	(a)				
		\$1,063		1, 09				
	(a)	(a)	(a)	(a)				
	68 35	2, 618		2, 71				
}		1, 371		1, 40				
J	(a)	(a)	(a)	(a)				
L	(a)	(a) 108	(a)	(a)				
5 	10	(a)		14				
	200	552		6 l 75				
	28	(a)	(a)	b 2				
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	13	(w) 60	(6)	g				
7	51	824		87				
l	86	343		63				
,	150	(a)	(a)	ð 15				
,	1	(a)	(a)	(a)				



<sup>Not reported.
Not including interest and depreciation of value of plant.
Not including interest.</sup>

TABLE IV.—COST OF PRODUCTION OF MISCELLANEOUS IRON AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1, 12 to 14, and 16 to 19 are in the United States; numbers 2 to 11, and 20 are on the continent of Europe; and number 15 is in Great Britain.]

		Additional	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
1	\$0.111 (a) (a) (a) (a) (b) (c) (a) (a) (a) (a) (a) (a) (a) (a) (a) (a	(a) (a) (a) (a) (a) \$0.098 (a) .098 (a) (a) .480 (a)	(6) (6) (6) (6) (6) (6)	b \$0. 111 (a) (a) (a) (d) (d) (d) (d) (d) (d) (a) (a) (a) (a) (a) (b) (a) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d
16	. 121 . 117 . 118 . 018	.748 .745 .751 (a) (a)	(a) (a)	. 869 . 862 . 969 b . 018 (a)

a Not reported.
b Not including interest and depreciation of value of plant.
b Not including interest.

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STEEL INGOTS.

149

TABLE V.-COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

A.—PERIOD COVERED AND QUANTITY OF PRODUCT.

[Note to this edition of the report on Cost of Production of Iron, Steel, Coal, etc.—After a small number of copies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

		Period covered.		1	ngots produce	d.		
Estab- lish- ment num-	Locality.		Days	Desci	iption.	Tons of pour		No. of con-
ber.		Torminal dates.	run- ning time.	Process.	Used mainly for—	Total.	Per day.	ers.
1 2 3	do	Jan. 1, 1839, to Dec. 31, 1889 Jan. 7, 1889, to July 1, 1889 Jan. 1, 1889, to Dec. 31, 1889	126 117 244	Besseiner Besseiner	Wire Nails Ship and boil- er plates, bars, and	51, 479 28, 313 116, 880	432 242 479	2 2 2
4 5	do	Jan. 3, 1889, to Jan. 4, 1890 July 1, 1889, to Dec. 31, 1889	187 a 150	Bessemer . Open bearth		24, 617 & 4, 000	147 a 27	b 2
7	do Continent of Europe.	Jan. 1, 1889, to Jan. 4, 1890 July 1, 1888, to June 30, 1889	199 140	Bessemer Bessemer	er plates. Nails. Rails, bars, tires, and	68, 790 22, 614	346 162	2
10	do	July 1, 1888, to June 30, 1889	274	Thomas	aprings. Rails, railway ties, fish-plates,	37, 016	135	2
	do		65	Siemens-	etc. Plates	2, 533	39	61
	do		70 70		Rails Springs, bars. shafting, and machinery.	d 19,470 e 4,206	d 278 ● 00	2 2
14 15	do	Nov. 1, 1889, to Nov. 30, 1849 Apr. 1, 1889, to Mar. 31, 1800	a 25 (f)	Thomas	Rails Rails, plates,	a 3,788 (f)	a 152 (f)	S
16	do	Jan. 1, 1888, to Dec. 31, 1888	S	Thomas	etc. Rails, plates,	54, 978	(J)	3
17	Great Brit.	Jan. 1, 1889, to June 30, 1889	139	Bessemer	etc. Railway aleepers.	26, 569	191	2
18	do	Jan. 1, 1889, to June 30, 1889	136	Siemens- Martin.	Ship plates	19, 944	147	86
19 20 21	do do	Mar. 29, 1888, to Sept. 29, 18#d	(<i>f</i>) 134 6	Bessemer Bessemer Siemens- Martin.	Rails Rails Ship plates .	50, 611 68, 451 2, 435	(f) 511 406	(f) 6 6 16

a Only one turn per day is worked in this establishment.
b Furnaces.
c Direct process.
d The establishment also produced during the period 4,206 tons by the indirect process.
f The establishment also produced during the period 19,470 tons by the direct process.
Not reported.

TABLE V.-COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES-Continued.

B .- QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1 to 8 are in the United States; numbers 9 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. Note to this edition of the report on Cost of Production of Iron, Steel, Cosl, etc.—After a small number of copies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

Estab-		Tons of 2,2	40 pounds				Cost.		
num- ber.	Pig iron.	Scrap.	Ferro- manga- nese.	Other.	Pig iron.	Scrap.	Ferro- manga- nese.	Other.	Total.
1	55, 916	5, 381	429	a1, 157	\$935, 776	\$81, 634	\$24, 462	a\$31, 375	\$1, 076, 247
2	30, 177	647	256		491, 335	10, 626	13, 280		515, 241
3	114, 944	22, 015	3, 821		1, 846, 175	344, 688	149, 321		2, 340, 184
4	25, 565 750	1, 256 3, 075	229		434, 605	21, 352	15, 148		471, 105
5	750	3, 075	40	6450	11.20	61,500	2, 600	b 13, 500	88, 850
7	73, 488		765		1, 249, 296		43, 146		1, 292, 443
9	c 25, 509			(c)	c133, 480			(c)	333, 480
10	c44, 493			(c)	c480, 307			(0)	489, 307
11	d 2, 719	(d)	(d)	(d)	d 33, 164	(d)	(d)	(d)	33, 164
12	d 22, 813	(d)	(d)	(d)	d272, 487	(d)	(d)	(d)	272, 487
13	d 4, 728	(d)	(4)	(d)	d 56, 525	(d)	(d)	(d) 1	56, 523
14		14	23	a 193	44, 873	211	1, 085	a 4, 220	50, 389
15	(e)	(e)	(e)	(e)	(e)	(e)	(8)	(e)	(e)
16	f 65, 314	(n)		in	£745, 447	(1)		(1)	745, 447
17	28, 915	1, 670	186	a 153	336, 335	18, 286	9, 362	a 2, 983	366, 960
18		7, 301	193	93,312	165, 032	84, 793	8, 275	g 13, 355	271, 435
19		3, 733	160	a 4, 481	576, 425	41, 858	8, 279	a 81, 272	707, 834
20		4, 732		a 4, 669	723, 473	38, 647		a 92, 153	854, 27
21		377	26	g 650	A 27, 561	A4, 800	A 1, 170	g, h 2, 965	A 36, 496

1.0

s Spiegeleisen.

b Extra puddled muck bar iron.

c The quantity and cost of other material (spiegeleisen) are inseparably combined with the quantity and cost of pig iron.

d The quantities and costs of all other materials are inseparably combined with the quantity and cost of pig iron.

e Not reported.

f The quantities and costs of scrap and other material (spiegeleisen) are inseparably combined with the quantity and cost of pig iron.

g Iron ore.

A Net cost; the value of the cinder, scrap, etc., has been deducted.

TABLE V.-COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS > ESTABLISHMENTS IN VARIOUS STATES-Continued.

C .- PROPORTIONS OF MATERIALS USED.

2	Pounds of	materials !	to one ton o	f product.	Cost of materials per ton of 2, 240 pounds.				
Establish- ment number.	Pig iron.	Scrap.	Ferro- manga- nese.	Other.	Pig iron.	Scrap.	Ferro- manga- nese.	Other.	
1	2, 299 2, 385 2, 203 2, 326 420 2, 393 c2, 527 c2, 694 d2, 404 d2, 625	221 51 422 114 1,722	18 200 73 21 22 25 (d) (d) (d)	b 252 (c) (d) (d)	\$16.735 16.282 16.062 17.000 15.000 17.000 c 13.073 c 10.997 d 12.197 d 11.944	\$15. 728 16. 423 15. 657 17. 000 20. 000	\$57. 021 51. 875 39. 079 66. 148 65. 000 56. 400 (d)	a \$27. 118 b 30, 000 (c) (d) (d) (d)	
3 4 5	d 2, 518 2, 526 (e) f2, 661	(d) 8 (e) (f)	(d) 14 (e)	(d) s 114 (e) (f)	d 11.955 10.506 (e) f1L 413	(d) 15. 071 (e) (f)	(d) 47. 174 (e)	(d) a 21. 865 (e) (f)	
17 18 19 20	2, 438 1, 633 2, 212 2, 331 1, 930	141 820 165 155 347	16 22 7	a 13 g 372 a 198 a 153 g 598	11. 632 11. 553 11. 534 10. 154 13. 137	10. 950 11. 614 11. 213 8. 167 A 12. 733	50, 333 42, 876 51, 744 A45, 000	a 19, 497 g 4, 032 a 18, 137 a 19, 737 g, h 4, 562	

s Spiegeleisen.

b Extra puddied muck bar iron.

c The quantity and cost of other material (spiegeleisen) are inseparably combined with the quantity and cost of pig iron.

d The quantities and costs of all other materials are inseparably combined with the quantity and cost of pig iron.

d Not reported.

f The quantities and costs of scrap and other material (spiegeleisen) are inseparably combined with the quantity and cost of pig iron.

g Iron ore.

A Net cost; the value of the cinder, scrap, etc., has been deducted.

TABLE V.-COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES-Continued.

D.—GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1 to 8 are in the United States; numbers 2 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included. Note to this edition of the report on Cost of Production of Iron, Steel, Coal, etc.—After a small number of copies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.].

Estab-		Materials,							
lish- ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	\$1, 076, 247		S1, 075, 721	\$99, 891	\$15,000	843, 252	\$45,278	\$5,000	\$1, 284, 142
2	515, 241	2, 483		54, 500	3, 287	10, 840		341	611, 494
3	2, 340, 184	59, 655		177, 978	12, 600	107, 408		1, 200	2, 632, 615
4	471, 105			41, 639	2, 850	11, 324	37, 058	360	563, 553
5	88, 850	6, 800	82, 050	12,000	1,000	7, 600	6, 800	100	109, 550
7	1, 292, 442		1, 291, 217	118, 042	3, 505	36, 837	42, 377	413	1,492.301
9	033, 480	2, 217	331, 263	15, 513	1,583	12,018	24, 559	249	385, 185
10	489, 307	2, 178 283	487, 129 32, 878	38, 015 2, 473	3, 665 273	23, 663	75, 994 3, 960	555	629, 021
11	23, 161	3, 934	268, 553	8, 548	1, 830	2, 847 12, 998		195	42, 468
12	272, 487			3, 588	530			42	306, 355
13	56, 525	(a) 223	56, 525 50, 166	3, 834	1, 070	4, 038 3, 234	5, 888 4, 086		570, UIL
15	50, 389		(a)	(a)	(4)	(a)	(a)	(a) (a)	e 62, 390
16	745, 447	(a) 43, 268	702, 179	57, 012	d 24, 685	30, 183	77, 519	(d)	(a) 891, 578
17	366, 966	5, 478		17, 240	4, 015	6, 337	14, 368	522	404, 870
18	271, 455	7, 440		31, 683	1, 358	17, 552	21, 606	180	336, 394
19	707, 834	11, 431		36, 093	2, 463	47, 231	32, 974	634	815, 798
20	854, 273	7, 274		38, 469	3, 291	21, 851	51, 637	388	962, 135
21	(a)	(a)	36, 496	4, 147	195	2, 332	e 1, 185	(e)	44, 355

a Not reported.
b Includes the value of cinder, scrap, etc., produced during the period.
c Not including taxes.
d The expenditures for taxes are inseparably combined with those for officials and cierks.
The expenditures for taxes are inseparably combined with those for supplies and repairs.

TABLE V.—COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES-Continued.

E.—ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 8 are in the United States; numbers 9 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included. Note to this edition of the report on Cost of Production of Iron, Steel, Coal, etc.—After a small number of copies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

Estab-		Materials.						1					9111
lish- ment num- ber.		Gross				0.	Labor	Offi- cials and	Fuel.	Sup- plies and re-	Taxes	Total.	
	Pig iron.	Scrap.	Ferro- man- ganese		Total.	cin- der, scrap, etc.	Net.	4.5	cl'ks.		pairs.		
1 2 3	\$17. 177 17. 335 15. 795 17. 655	2,949	.469	a\$0. 576	\$19.755 18,179 20.022 19.137	.088	18, 091	1.923 1.522		\$0.794 .383 .919 .460	\$0.831 1.050 .453 1.505	.010	
5 7 9 10	2, 813 18, 161 c14, 747 c13, 219	15.375	. 650 . 627	(c) (c)	22, 213 18, 788 14, 747 13, 219	1.700 .018 .098 .059	20, 513 18, 770 14, 649 13, 160	3.000 1.716 .686 1.027	. 250 . 051 . 070 . 099	1.900 .535 .531 .639	1.700 .616 1.086 2.053	.025 .006 .011 .015	27. 388 21. 694 17. 033 16. 993
13		(d) (d) ,056	(d) (d) (d) .286 (d)	(d) (d) (d) al. 114 (d)	13, 093 13, 995 13, 439 13, 302 13, 719	. 202 (a) 050	12, 980 13, 793 /13, 439 13, 243 12, 670	1.012			1,563 ,731 1,400 1,079	. 010 (e)	16. 766 15. 73: /16. 78: g 16. 470 16. 477
	413, 719 413, 559 12, 659 8, 275 11, 389	(i) .688 4.251	.353	(i) a _i 112	13, 559 13, 812 13, 611	. 787 . 206 . 373	12. 772 13. 606 13. 218 13. 760	1. 037 . 649 1. 589	A . 449 . 185 . 068	. 549 . 238 . 880	1. 520 1. 410 .541 1. 083 651	(h) .019	16. 217 15. 238 16. 867 16. 119
20 21	10, 569 k11, 319	565		a 1. 346 jk1. 218	12, 480	106	12.374 14.988	1. 703	.048	. 319	.754 m. 487	. 006	

a Spiegeleisen.

a Spiegeleisen.

b Extra puddied muck her iron.

e The expenditures for other material (spiegeleisen) are inseparably combined with those for pig iron.

d The expenditures for all other materials are inseparably combined with those for pig iron.

e Not reported.

f Includes the value of cinder, scrap, etc., produced per ton of product.

g Not including taxes.

A The expenditures for taxes are inseparably combined with those for officials and clerks.

i The expenditures for scrap and other material (spiegeleisen) are inseparably combined with those for visit iron. i The expenditures for taxes are inseparably combined with those for supplies and repairs.

TABLE V.—COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

F.—PER CENT, OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 8 are in the United States; numbers 9 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. This table is based on the preceding one, and to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader is referred to that table for such information as they furnish. Note to this edition of the report on Cost of Production of Iron, Steel, Cost, etc.—After a small number of copies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

Estab- lishment number.	Materials (net).	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	83, 77 83, 85 88, 63 88, 65 86, 52 86, 52 86, 52 87, 66 80, 03 77, 42 80, 41 78, 76 89, 29 78, 29 78, 29 85, 37 87, 29 88, 22	7. 78 8. 91 6. 73 10. 95 7. 39 10. 95 5. 82 2. 79 5. 88 6. 14 6. 15 6. 13 4. 26 9. 42 4. 42 4. 42 4. 03	1. 17 .54 .48 .91 .91 .58 .60 .75 1. 71 2. 77 1. 21 2. 77 1. 21 .30	3.37 4.08 2.01 6.94 2.47 3.12 3.76 6.70 4.24 5.72 5.19 4.02 5.75 5.70 2.57 7.52 5.70	3. 52 3. 87 2. 01 6. 57 6. 21 2. 84 6. 38 12. 08 12. 08 6. 55 9. 52 9. 52 9. 52 9. 64 9. 6	.39 .05 .04 .07 .09 .03 .04 .09 .06 .09 .06	100 100 100 100 100 100 100 100 100 100

TABLE V.—COST OF PRODUCTION OF **STEEL INGOTS** AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

G.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS

[Establishments numbers 1 to 8 are in the United States: numbers 9 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. Note to this edition of the report on Cost of Production of Iron. Steel, Coal, etc.—After a small number of copies of this report had been printed and distributed containing the flurres for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

	Additional cost.						
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.			
•••••	*\$600	\$19,000		\$19,600			
	700		\$12,500	13, 20			
	30 90	3, 187		3, 18 2, 18			
	(a) (a) (a) (a)			(a) (a) (a)			
	(a) (a) (a)			(a) (a) (a)			
3		b 12, 453	(b)	c 12, 45			
				•••••••••			

a Not reported.

b Depreciation of value of plant and expenses of London agency are inseparably combined with interest.

c Including expenses of London agency.

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TABLE V.—COST OF PRODUCTION OF STEEL INGOTS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 3 are in the United States; numbers 9 to 16 are on the continent of Europe; and numbers 17 to 21 are in Great Britain. Note to this edition of the report on Cost of Production of Iron, Steel, Coal, etc.—After a small number of capies of this report had been printed and distributed containing the figures for establishments 6 and 8 serious errors were found in these figures and, therefore, they have been withdrawn in this edition.]

		Additional	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
1	\$ 0. 011	\$ 0, 349		\$0. 36
3	.006		\$0. 107	. 11:
7	.008	.046		. 00 10 .
D	. 004			.00
1	(a) (a)			(a) (a)
8	(a) (a)			(a) (a)
5	(a) (a)			(a) (a)
7	. 001			. 00
9		b.246	(6)	c.24
l				· · · · · · · · · · · · · · · · · · ·

a Not reported.

SUMMARY OF COST OF STEEL INGOTS (BESSEMER PROCESS) IN FIVE ESTABLISHMENTS IN THE UNITED STATES.

[This summary is drawn from sub-tables A to H immediately preceding. The establishments covered are numbered 1 to 4, inclusive, and 7, being all the Bessemer steel ingot mills in the United States from which reports have been obtained. As may be seen the periods covered are irregular and are in the years 1889 and 1890. All statements in connection with this summary are revised in this edition to agree with the omissions referred to in the prefatory notes.]

Elements of cost.		Coat of 293, 109.	Average cost of one.
Materials (not). Labor Officials and clerks Fuel Supplies and repairs Taxos.		\$5, 630, 547 492, 050 37, 242 209, 661 207, 381 7, 314	\$19, 210 1, 679 , 127 , 715 , 707 , 025
Total		6, 584, 195	22. 463

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Two establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Three reported that they had no insurance. Two establishments gave the smount paid for interest: the aggregate of these makes the sum below. Three reported that there was no expenditure for interest. One establishment gave the amount charged to depreciation; which makes the sum below. Four reported that nothing was charged to depreciation. The sums entered in the first column below are, of course, apportioned in the second column among the whole five establishments.]

Insurance Interest Depreciation of value of plant	\$1.300 22,187 12,500	\$0.004 .076 .043
Total	35, 987	. 123

b Depreciation of value of plant and expenses of London agency are inseparably combined with interest.

c Including expenses of London agency.

PART I.—COST OF PRODUCTION.

SUMMARY OF COST OF STEEL INGOTS (BESSEMER PROCESS) IN THREE ES-MENTS ON THE CONTINENT OF EUROPE.

[This summary is drawn from the preceding sub-tables A to H. The establishments covered an numbers 4, 12, and 13, being all the Bessemer steel ingot mills on the continent of Europe from which reports were obtained. As may be seen the periods covered are irregular and are in the years 1888 and 1889.]

	Tons o	Tons of 2,240 Lounds		
Elements of cost.	Cost 46,29		Average cost of one.	
Materials (uet)			\$14. 179	
Labor. Officials and clorks	3.	649 943	. 597 . na3	
Fuel		054 678	. 628 . 955	
Supplies and repairs		486	.011	
Total	762,	151	16. 465	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[One establishment gave the amount paid for insurance, which makes the sum credited to this item below. For two the agent of the Department failed to obtain a statement. All three establishments reported that there was no expenditure for interest, and that nothing was charged to depreciation. The sum entered in the first column below is, of course, apportioned in the second column among the whole three establishments.]

Insurance		
Interest		
Total	90	. 002

SUMMARY OF COST OF STEEL INGOTS (BESSEMER PROCESS) IN THREE ESTABLISHMENTS IN GREAT BRITAIN.

[This summary is drawn from the preceding sub tables A to H. The establishments covered are numbers 17, 19, and 20, being all the Bessemer steel ingot mills in Great Britain from which reports were obtained. As may be seen the periods covered are of six months' duration and are in the years 1888 and 1889.]

	Tons of 2,	Tons of 2,240 pounds.		
Elements of cost.	Cost of 145,631.	Average cost of one.		
Materials (not)		\$18. 080 . 630		
Officials and clerks	10, 869 75, 419	. 073		
Supplies and repairs	. 98, 979 . 1, 544	. 6H0		
Total	. 2, 183, 303	14, 992		

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[All three establishments reported that they had no insurance. One establishment gave the amount paid for interest and the amount charged to depreciation in one sum, which is the sum below. Two reported that there was no expenditure for interest, and that nothing was charged to depreciation. The sum entered in the first column below is, of course, apportioned in the second column among the whole three establishments.]

Insurance	a \$. 2, 153	J 80. 086
Depreciation of value of plant	(a)	(a)
Total	12, 453	. 086

s The cost of depreciation is inseparably combined with the cost of interest.



STEEL RAILS.

H. Ex. 265——11

161

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STEEL RAILS.

The titles of Table VI and its sub-tables are as follows:

Tyble VI .- Cost of Production of Steel Rails at Various Establishments in Various States.

- A .- Period covered and quantity of product.
- B.—Quantity and cost of materials used.
- C. -Proportions of materials used.
- D.-General statement of cost for the period.
- E.—Elements of cost in one ton of 2,240 pounds.
- F.—Per cent. of each element of cost in one ton of 2,240 pounds.
- G .- Additional cost of certain theoretical elements.
- H.-Additional cost of certain theoretical elements in one ton of 2,240 pounds.

Table VI covers fewer establishments than is desirable. Every effort, however, has been made to secure information from a large number of establishments, the desire being to cover so many that the results would be accepted as thoroughly representative. As explained in the introduction, however, the Department did not succeed in securing such full and complete information. The steel rail manufacturers, not only of this country, but of Europe, are exceedingly sensitive on the matter of giving information relative to their great industry. It is a curious fact that while the producers of pig iron are not affected by this sensitiveness, it should so thoroughly prevail among steel rail manufacturers. Notwithstanding this feeling, thirteen establishments have been willing to furnish the Department with quite complete information. Of this number, two are in the United States, eight on the continent of Europe, and three in Great Britain. In addition to the proprietors of these thirteen establishments, the managers of several others have furnished us either with most important analytical information or positive statements as to the cost of making steel rails. We feel, therefore, that while this report lacks the returns from some of the very largest works in the United States and Great Britain, sufficient information has been secured to establish the approximate cost of the production of rails in these two countries. It is but due to the managers of great concerns in this country and abroad who have declined to furnish information, to say that the declination has always been made most courteously, and reasons sufficient to their minds have been given for the refusal. While believing that no possible harm, but on the contrary great good, would come from the disclosure of all the facts relating to the cost of production of steel rails, the writer nevertheless appreciates the position of the manufacturer who declines to furnish the information.

The days of running time reported are full days of two turns each. The supplementary tables concerning the reported cost of insurance, interest, and depreciation (sub-tables G and H) are very incomplete.

TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

•	DEDIAN	CUALBED	A 3677	QUANTITY	ΛÐ	

Es-		Period covered.	Rails produced.				
Es- tab- lish-	Locality.		Days of	Descrip-	Tons of 2,240 pounds.		
ment num- ber.		Terminal dates.	running time.	tion (pounds per yard).	Total.	Per day.	
1 2	United States	July 15, 1889, to July 27, 1889. Jan. 1, 1889, to Dec. 31, 1889.	11 258	(a) 62.7	4, 382 113, 460	308 440	
3	Continent of Europe	Jan. 13, 1889, to Apr. 6, 1889.	70	(6)	14. 914	213	
4	do	Jan. 1, 1889, to Dec. 31, 1889.	(a)	71.0	(a)	(a)	
	do	Jan. 1, 1889, to Dec. 31, 1889. Apr. 1, 1888, to Mar. 31, 1889.	(a)	19.1	(a)	(a)	
- 0		Apr. 1, 1888, to Mar. 31, 1889. Apr. 1, 1889, to Mar. 31, 1890.	(a) (a)	67.3	(a)	(a)	
- 41	do	Apr. 1, 1889, to Mar. 31, 1890.	(a)	(c)	(a)	(a)	
	do	July 1, 1888, to June 30, 1889	132	51. 5	16, 970	129	
10	do	July 1, 1888, to June 30, 1889.	37	19.1	951	26	
11	Great Britain	Apr. 1, 1888, to Sept. 29, 1888.	94	(c)	8, 294	88	
12	do	Apr. 1, 1888, to Sept. 20, 1888.	137	(a)	32, 926	240	
13	do	Jan. 1, 1880, to June 30, 1889	(a)	(a)	38, 167	(a)	

TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

B.-QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 1 and 2 are in the United States: numbers 3 to 10 are on the continent of Europe; and numbers 11 to 13 are in Great Britain.]

Zetab	Tons	of 2,240 pou	ınds.	Cost.					
liebmest,- number.	Ingota.	Blooms.	Billeta.	Ingota.	Blooms.	Billeta.	Total		
1	4, 868	120, 762		a 49 7, 360	\$2, 945, 720		a \$97, 38 2, 945, 72		
	(b) (b) (b) (b)	17, 176 (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	(b) (b) (b) (b)	284, 389 (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	284, 38 (b) (b) (b) (b) (b)		
10 11 12	19, 713 1, 086 1	6, 925 29 , 667	2, 914	338, 732 19, 906 746, 769	113, 618 620, 863	\$53, 919	338, 78 19, 90 167, 53 630, 86 746, 78		

e Estimated.

Not reported.
 From 50 to 105 pounds; average, about 73 pounds.
 Various.

b Not reported.

TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

C .- PROPORTIONS OF MATERIALS USED.

[Establishments numbers 1 and 2 are in the United States; numbers 3 to 10 are on the continent of Europe; and numbers 11 to 13 are in Great Britain.]

Establish-	Pounds of ma	terials to one t	on of product.	Coat of materials per ton of 2,210 pounds				
ment number.	Ingots.	Blooms.	Billets.	Ingota.	Blooms.	Billets.		
12	2, 488	2, 384 2, 580		a \$20, 000	\$24. 393 16, 557			
1	(b)	(b)	(6)	(b)	(b)	(b)		
A	(b)	(b) (b)	(b) (b)	(b) (b)	(b) (b) (b)	(b) (b)		
7	(b) (b)	(6)	(6)	(b)	1 66	(6)		
8	(b)	(b)	(6)	(b) 17. 178	(b)	(b)		
0	2, 603 2, 563	•••••	•••••	18, 296	•••••			
1		1,870 2,700	795		16, 407 15, 644	\$18, 31		
3	2.722	2, 100		16.009	15.014			

[&]amp; Estimated.

TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

D.—GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1 and 2 are in the United States; numbers 3 to 10 are on the continent of Europe; and numbers 11 to 13 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Es-		Materials.				2.1			
lish- ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total
1 2 3	a \$97, 360 2, 945, 720 284, 389	a \$4,860 96,304 20,830	a \$92,500 2,849,416 263,559	\$6, 748 156, 826 15, 561	(b) (b) (e)	a \$4, 820 47, 318 6, 013	a \$4,382 87,766 e6,674	a \$219 (b) 150	a.c\$108,669 d 3,141, 326 291, 957
5 6 7	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b) (b)	(b) (b) (b)	(b) (b) (b) (b)	(b) (b)
8	(b) 338, 732	19, 567	(b) (b) 319, 165	(b) (b) 17, 445	(b) \$1, 783	(b) (b) 5, 524	(b) (b) 36, 604	272	(b) (b) 380, 792
10 11 12 13	19, 006 167, 537 620, F63 746, 769	1, 000 17, 768 81, 041 91, 661	18, 906 149, 769 539, 822 654, 908	2, 054 21, 138 45, 054 60, 434	207 405 830 1, 935	522 4,740 14,766 26,123	3, 681 5, 597 11, 457 26, 086	32 48 98 661	25, 402 181, 697 612, 027 770, 147

a The cost of labor is derived from the payrolls and is exact; the costs for all other purposes are careful estimates, but without doubt are substantially correct.

b Not reported.

c Not including officials and clerks.

d Not including officials and clerks and taxes.

c The expenditures for officials and clerks are inseparably combined with those for supplies and

b Not reported.

F STEEL RAILS AT VARIOUS

. THE FOR THE STATE OF 2,240 POUNDS.

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Charles in 1982 No INE TON OF 2,240 POUNDS.

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TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

G .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1 and 2 are in the United States; numbers 3 to 10 are on the continent of Europe; and numbers 11 to 13 are in Great Britain.]

	Additional cost.						
Establishment number.	stablishment number. Insurance.			Total.			
1	(a) (a) (a) (a) (a) (a) (a) (a) (a)	(a) (a) (a) (a) (a) (a) (a)	(a) (a) (a) (a) (a) (a) (a) (a)	6 \$75 (a) (a) (a) (a) (a) (a) (a) (a)			
13		c\$12,971	(e)	d 12, 971			

TABLE VI.—COST OF PRODUCTION OF STEEL RAILS AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Concluded.

II. -ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2.240 POUNDS.

[Establishments numbers 1 and 2 are in the United States; numbers 3 to 10 are on the continent of Europe; and numbers 11 to 13 are in Great Britain.]

	Additional cost per ton.						
Establishment number.	Insurance.	Interest.	Depreciation of value of plant	Total.			
1	\$0.017 (a) (a) (a) (a) (a) (a) (a)	(a) (a) (a) (a) (a) (a) (a)	(a) (a) (a) (a) (a) (a) (a) (a)	\$ \$0. 017 (a) (a) (a) (a) (a) (a) (a) (a)			
0 1 2	.014			. 014			
13	••••••••	c \$0.310	(c)	d . 310			

a Not reported.

b Not including interest and depreciation of value of plant.
c Depreciation of value of plant and expenses of London agency are inseparably combined with d Including expenses of London agency.

a Not reported.

b Not including interest and depreciation of value of plant.
c Depreciation of value of plant and expenses of London agency are inseparably combined with interes

d Including expenses of Loudon agency.

THE AVERAGE COST OF STEEL RAILS IN THE UNITED STATES AND IN EUROPE.

It would be most gratifying if from the table relating to the cost of producing steel rails, pages 164 to 167, the average cost of producing standard steel rails in the United States, on the continent of Europe, and in Great Britain, could be so clearly ascertained as to establish figures for exact conclusions. The table embraces thirteen establishments, numbers 1 and 2 being for the United States; the total cost of a ton of rails in establishment number 1 being \$24.799 and in number 2, \$27.687. The Department has been positively informed relative to the cost of making steel rails in several of the very largest establishments in the United States, and there is no shadow of a doubt in the mind of the writer that in these establishments the actual cost of standard steel rails is, and has been for some time, within a few cents of \$22 per ton at the works. The book account of the cost at one of the establishments referred to in these remarks would show the cost to be from \$24.50 to \$24.75 per ton, the difference between the book account cost and the actual cost arising from the fact that in the one case some materials are charged at the market price, while in the other they are reckoned at what they really cost the producer of the steel rails. Those who make steel rails as a subsidiary feature of their business. paying perhaps larger attention to other products, probably cannot manufacture a standard quality of, say, 60 pounds to the yard for less than is stated for establishment number 2, that is, \$27.687, and the cost in such mills will vary from this figure in slight degree as conditions vary. An average to be drawn from the statements for establishments 1 and 2 (an average based on the total product, and not derived by adding the two sums together and dividing by 2) shows for a result \$27.579 as the average cost per ton. Passing to the continent of Europe, the only establishments which could be brought together for making an average are 3 and 9, both making heavy rails, The establishments numbered from 4 to 8, inclusive, located on the continent of Europe, did not give the quantity of product, and hence it is not possible to use them to obtain an average cost based on quantity: but taking 3 and 9. for which quantity of product was given, the average cost per ton is \$21.10, this being for heavy rails, practically the same standard as is produced by number 2 in the United States. Establishment 10. continent of Europe, manufactures light rails, but the output is small, and the cost \$26.711 per ton. Establishments from 3 to 10, inclusive, are all on the continent of Europe, and from 11 to 13, inclusive, in Great Britain. The cost per ton, by sub table E is shown to be for number 11, \$21.907; for 12, \$18.588, and for 13, \$20.178. While the kind of rails made by these three establishments was not reported, it is probably true that they were standard rails. Making an average for the three, based on the quantity of product, the cost is found to be

\$19.699. The cost of steel rails fluctuates considerably in Great Britain, the variations extending over a wider range, perhaps, than in the United States. The tendency to gamble and speculate in pig iron, to which reference has been made (page 14), is the leading factor in this great fluctuation. Its influence is felt in a serious way in the production of steel rails. During the latter part of 1889 a very celebrated firm, engaged in the production of steel rails and other products, the steel rail, however, being the lesser part of the output, furnished the Department the following figures as to the cost of making a ton of steel rails weighing 60 pounds per yard:

ELEMENTS OF COST IN ONE TON OF STEEL RAILS MADE IN ENGLAND IN 1889.

[The quantity of ingots used to make a ton of rails was 2,762 pounds, and their cost was \$17.667 per ton, the pig iron to make the ingots being charged in at the average market price, \$13.018 per ton. The rails made weigh about 60 pounds per yard.]

Elements of cost.	Cost per ton (2.240 pounds) of product.
Ingots	\$21, 783 2, 792
Total materials, net	1,540
Fuel Supplies and repairs Taxes, etc	. 774 . 75 8
Total	22. 456

This establishment, in October, 1890, found that the same grade of steel rails cost \$24.226. The higher cost is accounted for by the advance in the price of iron and the wages of labor. The statement for October, 1890, is as follows:

ELEMENTS OF COST IN ONE TON OF STEEL RAILS MADE IN ENGLAND IN 1880.

[The quantity of ingots used to make a ton of rails was 2,762 pounds, and their cost was \$19.091 per ton, the pig iron to make them being charged in at the average market price of \$13.991 per ton. The rails made weigh about 60 pounds per yard.]

Elements of cost.	Cost per ton (2.240 pounds) of product.
Ingots	\$23, 539 2, 920
Total materials, net. Labor Officials and clerks Fuel. Supplies and ropairs	1. 763 a. 352 (b) b 1. 493
Total	(4)

a The expenditures for taxes are inseparably combined with those for officials and clerks. b The expenditures for fuel are inseparably combined with those for supplies and repairs.

Notwithstanding this high cost in the particular concern just referred to for the latter part of 1889 and 1890, the writer is satisfied that steel rails can be produced in Great Britain, under normal conditions, for a sum not varying much from \$18 per ton, and it is with Great Britain only that any great competition in the supply of steel rails has come, a competition which has now practically ceased, as will be seen by reference to the tables on importations. If this statement be true, and it is believed to be sufficiently accurate for all business purposes or considerations, the lowest cost of producing steel rails in Great Britain is \$18, and the highest ordinary cost in the United States, \$27.70, a difference of \$9.70 in favor of the former. It is possible that under some peculiarly fortunate circumstances rails can be produced in Great Britain for less than \$18 per ton. Throwing out profits on the materials of which rails are made, which are ordinarily charged into the cost by British producers, and this statement as to cost lower than \$18 becomes reasonable, and without doubt approximates the exact truth, so that the difference between the lowest cost of British steel rails of 60 pounds to the yard and the lowest cost of the same grade of rails in the United States is in the vicinity of \$5 per ton.

These general tables on cost of production have been before the public over six months, having been sent to Congress in a preliminary report dated July 1, 1890 (returns from some additional establishments have since been incorporated with them), and so far the only criticism upon them which would seem to claim any attention on the part of this Department is that of Mr. James M. Swank, secretary of the American Iron and Steel Association, in his letter to Senator Nelson W. Aldrich, dated August 1, 1890, in which he refers to the cost of steel rails as given in that preliminary report (and in this) for Great Britain as being above the selling price of rails in that country during some portion of the period covered by our investigation. The criticism would at first seem a fair one to make, but it falls when one considers the fluctuating elements just referred to. In fact, Mr. Swank himself, in an article published in the Bulletin of the American Iron and Steel Association, June 11, 1890, offers very conclusive evidence of the invalidity of his subsequent criticism. He says:

The European markets go up and down as do our own. Steel rails afford a good illustration of the needed protection referred to. In January and February, 1890, English steel rails cost £7 5s., or about \$35 per ton, delivered on board vessels; in June the quotation was £4 10s., or about \$21.90, a fall of over \$13 per ton in 4 months. In August, 1888. English steel rails were quoted at £3 12s. 6d., or \$17.63 per ton, and from May to August, 1886, they were regularly quoted at £3 7s. 6d., or \$16.42. The quotations in 1886 and again in 1888 were doubled in the early part of 1890.

In the letter from the American Iron and Steel Association to Hon. Daniel Manning, in reply to his circular letter dated July 17, 1885, the association makes the following statement, when speaking of the cost of producing iron and steel:

With regard to the cost of producing iron and steel in competing countries, we have not believed it to be necessary to attempt to ascertain the elements of this cost, assuming that for all practical purposes the prices at which these products have recently been sold may be accepted as an approximation to their actual and usual cost.

And further, in speaking of references to foreign cost, the association says:

We shall assume, therefore, the foreign price to-day approximates the usual foreign cost.

These statements by the Iron and Steel Association are perfectly correct when quotations are low, but, as shown above, when British steel rails are quoted at \$35 per ton, the cost and the price bear no true relation to each other, although with the boom in iron and wages in the early part of 1890 not only cost but prices reached high figures, as has been shown. The period covered by the returns given in establishments 11 and 12 for Great Britain is from April 1, 1888, to September 29, 1883, and for establishment 13, from January 1, 1889, to June 30, 1889, and the lowest quoted price for steel rails for those periods was \$13.25 in June, 1888 (see page 179). The lowest cost, as given by our tables, was for establishment number 12, \$18.588, and this was the average cost covering the period just stated. Products are often sold at cost, especially steel rails in Great Britain, when the demand is light and the supply abundant. The same is true of wheat and other articles, as between this country and Great Britain. An examination of the market price of steel rails in Great Britain, in connection with the cost given in our tables, shows the harmony and the integrity of the statements made.

What the results would be of an average cost of steel rails derived from all the establishments in Great Britain we cannot say. We have done our best to reach such an average, not only for Great Britain, but for the United States. An average for Great Britain and the continent of Europe is of no great interest to this country. And for business purposes it would be unjust to use such an average in comparison with one for the United States, for it is manifest that cost of production is too high generally on the continent of Europe to allow of competition with us, and that it is only with Great Britain that competition in steel rails is possible.

DIRECT LABOR, ETC., FROM THE MATERIALS IN THE EARTH TO THE FINISHED PRODUCT.

In treating the cost of production of pig iron in the earlier pages of this report, considerable space was given to the results of an attempt to follow the materials from which iron is made back to the earth from which they are mined, and to determine how much was paid at each step, from the mining to the conversion of the materials in the blast furnace, for direct labor, how much for the salaries of officials and clerks

engaged in the administrative work, how much for supplies, repairs, and taxes, and how much for transportation of the materials to the point where used. The reader will do well to examine what was there presented on this subject for pig iron. The attempt has been made to carry out a similar analysis for steel rails, and the tables exhibiting the results will immediately follow, but the difficulties in the way make the work far less satisfactory than for pig iron. These difficulties lie in the additional processes of ingots, blooms, and rails through which the materials must be traced, and in the fact that it was possible to get any information from only a few rail mills. There is first presented the results obtained by analyzing establishment number 1 of Table VI, situated in the United States. The conditions were such in this case that it was impossible to trace out the actual materials used, and the table is made up from averages. Thus six representative establishments producing ore fit for Bessemer pig were taken, and an average for direct labor and each of the other items figured out. Coal, coke, and limestone were treated in the same way. The average cost for conversion of raw materials into pig was similarly obtained from a half dozen blast furnaces. Thus, step by step, the work was followed up to the necessary quantity of ingots and finally to the finished ton of steel rails. The entire costs when summed up were found to be \$24.666, while the cost as tabulated in sub-table E, is \$24.799, a difference of only 13.3 cents. The table is now given:

COST OF DIRECT LABOR, ETC., IN ONE TON OF STEEL BAILS. UNITED STATES.

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
Production of 4,137 pounds of iron ore.	\$2.142	\$0. 124	\$0.807	\$0.081	\$4L 893		\$2,926	\$10.973
Production of 1,497 pounds	. 205	. 018	. 025	. 001	.318		. 036	. 603
of limestone. Production of 4,808 pounds of bituminous coal.	1. 973	. 068	. 149	. 013	ļ. 	\$0.012		. 2. 243
Conversion of above coal into 3.532 pounds of coke	. 598	. 076	. 072	.009	. 738			1.493
Production of 233 pounds of cinder. (See below.)								
Conversion of above materials into 2,649 pounds of pig iron.	1.576	. 134	. 718	. 054				2. 482
Production of 79 pounds of scrap and ferro-manganese. (See below.)			ļ				••••••	
Conversion of above materials into 2,488 pounds of steel ingota.	1.689	. 120	. 503	. 011				2. 323
Fuel (2,220 pounds bitumin-	.912	. 032	. 069	. 006		.019		1.038
ous coal) used in ingot mill. Conversion of above ingots into 2,240 pounds of steel	1.540	(a)	1.000	. 050				2. 500
rails. Fuel (2,340 pounds bituminous coal) used in rail mill.	. 962	. 033	. 073	. 007		. 020		1.096
Total	11. 597	. 605	3. 416	. 232	5. 049	.081	2.963	24. 842
Cost of above 233 pounds of a Cost of above 79 pounds of so	inder, o rap and	oly the t	otal of wanganese	rhich can , only th	be give	n	can be given.	. 004 . 937
Total gross cost of one Deduct value of scrap produc	ton (2,24 ed in th	0 pound e ingot a	e) of ates nd rail n	el rails		•••••		25. 873 1. 207
Total net cost of one to	n (2,240 j	ounds)	of steel r	ails				24. G66
		MARY O						
Total cost of ore, limestone, cost of direct labor in produce Per cent. of cost of direct lab	ing the	above m	sterials.					\$15. 814 \$4. 918 32
Total cost of converting above Cost of direct labor in conver	e materi	als and	inder in	to pig ir	ou			82.482 81.576
Per cent. of cost of direct lab	or in cor	verting	above m	aterials	and cine	ier into p	ig iron	63
Total cost of converting pig i Cost of direct labor in conver Per cent. of cost of direct lab steel ingots.	ting pig	iron and	scrap a	ad ferro-	mangan	ese into i	teel ingots	\$3.361 \$2.601 77
Total cost of converting steel								\$3.685
Cost of direct labor in converger cent. of cost of direct lab	or in cor	verting	steel ing	oia into	2,240 po	unds of	steel rails	\$2. 502 68
Total net cost of one ton of si Cost of direct labor in one ton Per cent. of cost of direct lab	of steel	rails						\$24.666 \$11.597 47

S Not reported.

In addition to the foregoing analysis drawn from establishment number one of Table VI, a large steel rail mill in the United States has furnished the Department with the following statement showing expenditures for direct labor. This shows a total cost of \$14.215, as against \$11.597 in the table just given. The difference is largely due to the cost of conversion of pig iron into steel rails, the result of local conditions:

COST OF DIRECT LABOR IN ONE TON OF STEEL RAILS.

UNITED STATES.

Materials and successive stages of conversion.	Cost.
Production of 4.353 pounds of iron ore	\$2.997
Production of 984 pounds of linestone. Production of — pounds of bituminous coal	. 198
Conversion of above coal into 3,275 pounds of coke	1. 524
Conversion of above materials into 2.668 pounds of pig frou Production of 1,595 pounds of bituninous coal for fuel Conversion of above pig fron into 2,240 pounds of steel rails.	2. 481 . 876
Conversion of above pig iron into 2,240 pounds of steel rails	6. lù9
Total cost of direct labor in one ton (2,240 pounds) of steel rails	14. 215

The following calculation is for one tou of steel rails made in Great Britain, and the statement is based on establishment number 12 of the steel rail tabulation, Table VI. In this case we started with the cost of steel rails as given in sub-table E for this establishment, and were able to trace the costs back through the preceding processes of making the blooms, ingots, pig iron, coke, coal, and limestone, the actual materials used being considered at each step except in the case of ore. This was possible, as all these elements were produced under the direction of the company making the rails. For iron ore, however, we did not have the exact mine from which it was taken, but we did have a representative mine in the same district, and we also had the cost of transportation; so that the element of possible error in calculating costs in this case is of necessity exceedingly slight. As to the figures of difference between foregoing actual costs and costs as charged by blast furnace, a part is accounted for by the royalty or rent paid to the owners of the soil, which amounted to 60 cents for the amount of ore shown in the statement. The remainder is the difference between the actual cost of the ore delivered at the furnace, as figured out from the statement furnished by the mines, and the cost as charged in the books of the blast furnace. The table follows:

PART I.—COST OF PRODUCTION. 175

COST OF DIRECT LABOR, ETC., IN ONE TON OF STEEL BAILS. GREAT BRITAIN.

Materials and successive stages of conversion.	Direct labor.	Officials and clerks.	Sup- plice and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between foregoing actual costs and costs as charged by blast furnace.	Total.
Production of 5,127 pounds	\$0. 860	\$0.025	\$ 0. 185	\$0. 030	\$4.166	ļ	\$2,241	\$7.507
of iron ore. Production of 941 pounds of limestone.	. 163	ļ	.016		.041			. 220
Production of 4,778 pounds of bituminous coal.	2. 083	. 110	.308	. 062	ļ	\$0. 334		2. 807
Conversion of above coal into 3,532 pounds of coke.	. 440	. 039	. 298					. 177
Production of 341 pounds of cinder, scrap, etc. (See below.)								
Conversion of above materials into 2,912 pounds of pig iron.	. 784	.019	. 754	.016				1. 573
Production of 383 pounds of scrap and spiegelesson. (See below.)								
Conversion of above materials into 2,798 pounds of ateel ingots.	.702	. 060	. 912	. 007		.041		1.711
Fuel (361 pounds bitumin- ous coal and 171 pounds coke) used in ingot mill.	. 279	.015	. 052	.008		.041		. 395
Conversion of above ingota into 2,700 pounds of steel blooms.	. 492	. 030	. 419	. 001				. 945
Fuel (810 pounds of bitu- minous coal) used in bloom mill.	. 353	.019	. 052	. 011		. 057		. 492
Conversion of above blooms into 2,240 pounds of steel rails.	1.348	. 025	.318	.003				1. 744
Fuel (672 pounds of bituminous coul) used in rail mill.	. 293	.015	.043	.009	····	.047		. 407
Total	7. 817	337	3.417	. 150	4. 207	.479	2.241	18.668
Cost of above 341 pounds of cost of above 383 pounds of se	inder, sc	rap, etc.,	only th	e total o	₹ wbich	can be g	iven be given	. 286 2. 367
Total gross cost of one t Deduct value of scrap produc	ton (2,246 od in th) pounds e ingot, l	of steel	rails nd rail m	illa		••••••	21.341 2.727
Total net cost of one to	n (2,240 j	pounds)	of steel :	raile		•••••	••••••	18. 614
		MARY O						1
Total cost of ore, limestone, c Cost of direct labor in produc	ing the s	bove ma	terials	••••			• • • • • • • • • • • • • • • • • • •	\$11.401 \$3.546
Per cent. of cost of direct labo Total cost of converting abov								\$1.573
Cost of direct labor in convert Per cent. of cost of direct laborron.	ing abov	e materi	als and	siuder, s	Crup, etc	., into p	ig iron	\$0.784
Total cost of converting pig it Cost of direct labor in convert Per cent. of cost of direct laboring ots.	ing pigi	ron and	serap an	d apiege	loisen in	to nteni i	ngots	\$2. 106 \$0. 961 47
Total cost of converting steel Cost of direct labor in convert	ingots in	nto steel	blooms.	hiooms	• • • • • • • • • • • • • • • • • • • •		••••••••	\$1.487 \$0.845
Per cent. of cost of direct labo Total cost of converting steel	or 🖮 con	verting s	teel ingo	ta into s	iteel blo	tan	• • • • • • • • • • • • • • • • • • • •	59 \$2. 151
Cost of direct labor in conver Per cent. of cost of direct labor	ting stee	l biooma	into 2.23	0 pound	s of ates	d rails		81. 661 77
Total net cost of one ton of at Cost of direct labor in one ton	eel rails of steel	rails		•••••	•••••••	· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •	\$18.614 \$7.817
Per cent. of cost of direct labor	or in one	WE OF ST	COL LINES		••••••		•••••••	42

The next statement, relating to the analysis of cost of one ton of steel rails produced on the continent of Europe, is based on establishment number 3 of the steel rail tabulation, Table VI. In making this analysis for the continent of Europe we were able to follow the processes back, as in the case of the British establishment just given, until we came to the pig iron, when, owing to the incompleteness of the pig-iron statement for this establishment, we found it necessary to use the statement from another furnace for the cost of converting the materials into pig irou. For the costs of the materials themselves, except limestone and ore, we had data available from the report for number 3. For the limestone we had the total cost as reported at the pig-iron furnace, but had no schedule showing the subdivision of this total into the needed items. The division of this small amount was therefore made in the same ratio as that indicated in the limestone schedules for the northern district of the United States. The ore used was from the same locality as that used in the British establishment just given; so the same statement was made use of. In other respects the same plan was pursued as in the case of the British mill. The following is the table:

COST OF DIRECT LABOR, ETC., IN ONE TON OF STEEL RAILS.

CONTINENT OF EUROPE.

Materials and successive stages of conversion.	Direct lubor.	Officials and clerks.	Sup- plies and repairs.	Taxes.	Transport to point where used.	Timber.	Difference between fore- going actual costs and costs as charged by blast furnace.	Total.
Production of 5,701 pounds of iron ore.	\$0. 957	\$0.028	1	\$0.033	\$3.744		\$3 . 815	\$8.783
Production of 1,582 pounds of limestone.	.174	.016	. 021	. 001	. 086			. 298
Production of 4,927 pounds of bituminous cosl.	2, 326	1	.315	. 042		\$0.480		3. 338
Conversion of above coal into 3,509 pounds of coke.	. 590	051	. 047	.024	. 064			. 776
Conversion of above materials into 3,061 pounds of pig iron.	1. 246	. 021	a.381	(a)			1.476	3. 124
Conversion of above pig irou into 2,612 pounds of steel ingote.	.512	.110	. 852	.012				1. 486
Fuel (782 pounds of coke) used in ingot mill.	. 649	. 050	. 081	.018		. 107		. 903
Conversion of above ingots into 2.580 pounds of steel blooms.	. 203	. 049	. 240	.049				. 541
Fuel (217 pounds of coke)	. 180	.014	. 022	. 005		. 030		. 251
Conversion of above blooms into 2,240 pounds of steel rails.	1.043	(b)	b.448	. 010				1. 501
Fuel (474 pounds of bituminous coal) used in rail mill.	. 224	.017	. 030	.004		.046		. 321
Total gross cost of one ton (2,240 pounds) of steel rails.		.531	2. 643	. 196	3. 894	. 663	5, 291	21. 322
Deduct value of scrap produc	ed in in	got, blow	m, and ra	il mills.		••••••	•	L 687
Total net cost of one to	a (2,240 g	ounds)	of steel r	ails				19. 635

The expenditures for taxes are inseparably combined with those for supplies and repairs.
 The expenditures for officials and clerks are inseparably combined with those for supplies and repairs.



COST OF DIRECT LABOR, ETC., IN ONE TON OF STEEL BAILS-Concluded.

SUMMARY OF THE FOREGOING.

Per cent. of cost of direct labor in one ton of steel rails

Labor cost in one ton of steel rails, speaking now of labor cost after all the materials have been assembled in the steel works and are ready to be subjected to the proper manipulations for the production of standard steel rails, should, from the conditions existing, be less per ton relatively in this country than in Great Britain or on the continent of Europe, because American producers of rails dispense with at least one expensive process still adhered to by many foreign producers, and, furthermore, our materials in the United States-ore, etc.-are purer than those used in most other countries; hence the quantity of ore required for the production of a ton of standard rails is less here than in foreign countries, and of course the labor required to handle the materials necessary to produce a ton is, in consequence, less here. This is more clearly shown by reference to the tabular statements which have just been given, showing the analysis of cost of one ton of steel rails in the United States, in Great Britain, and on the continent of Europe, wherein it is seen that in establishment number 1, in the United States, only 4,137 pounds of iron ore were necessary for the production of one ton of standard rails, while in establishment number 12, in Great Britain, 5,127 pounds, nearly 1,000 more, were needed to produce a ton of practically the same kind of rails, and in establishment number 3, on the continent of Europe, 5,701 pounds, or nearly 1,600 pounds more, of iron ore were necessary for the production of one ton of standard steel rails. These three establishments, numbers 1, 12, and 3, are probably far more indicative of the true conditions surrounding the production of standard steel rails in the respective countries than any of the others given in Table VI. As already remarked they are the only ones for which such analytical statements as those just given could be drawn. From these statements it will be seen that for the establishments given the direct labor cost of producing a ton of standard steel rails in the United States is \$11.597, in Great Britain, \$7.817, and on the continent of Europe, \$8.104, showing a difference, against the United States of \$3.78 in favor of Great Britain, and of \$3.493 in favor of the continent of Europe.

H. Ex. 265-12



PRICES OF STEEL RAILS IN UNITED STATES AND GREAT BRITAIN.

The next table shows the prices of steel rails in the United States and Great Britain for the years 1867 to 1890, inclusive.

The prices of British steel rails at British ports from 1867. to 1878, inclusive, are taken from a statement presented by Mr. H. V. Poor to the Ways and Means committee of the house of representatives in February, 1880; for 1879 the price is an average from Fossick's chart, an English statistical publication of high standing; and for 1880 to 1890, inclusive, the prices have been averaged from weekly English quotations in the New York Iron Age. Mr. Poor's figures represent average quotations. All the other figures in the table are compiled from the statistical reports of the American Iron and Steel Association.

AVERAGE PRICES OF STEEL RAIL

Year.	United States. Great Brita		Britain.		United	States.	Great Britain.		
	Aver- age price of gold.	Aver- age price of rails in cur- rency.	Price in gold f. v. b. at British ports.	Cost in cur- rency at Amer- ican ports.	A car.	Average price of gold.	Aver- age price of rails in cur- rency.	Price in gold f. o. b. at British ports.	Cost in cur- rency at Amer- ican ports.
1808 1808 1870 1870 1870 1870 1870	110	\$1,00,00 138,50 134,25 198,75 162,50 112,00 125,30 74,25 68,13 36,26	805, T0 61, 32 34, 99 30, 37 34, 99 65, 73 44, 25 32, 12	\$103.00 123.68 112.52 87.44 96.31 110.45 120.53 106.55 83.60 83.43	1879	100 100 100 100 100 100	\$49, 25 67, 50 61, 13 48, 50 37, 75 28, 50 34, 50 37, 08 23, 83	\$25, 88 34, 42 30, 41 26, 27 22, 72 21, 19 23, 11 18, 70 19, 15	\$57, 88 65, 43 61, 41 57, 27 53, 73 48, 19 43, 11 34, 70 39, 13
1405	105	44.23	28. 2V 26. 33	32.68	1890 (41	100	29.25 31.50	24.57 21.89	44, 57 41, 89

a Proce in Jame

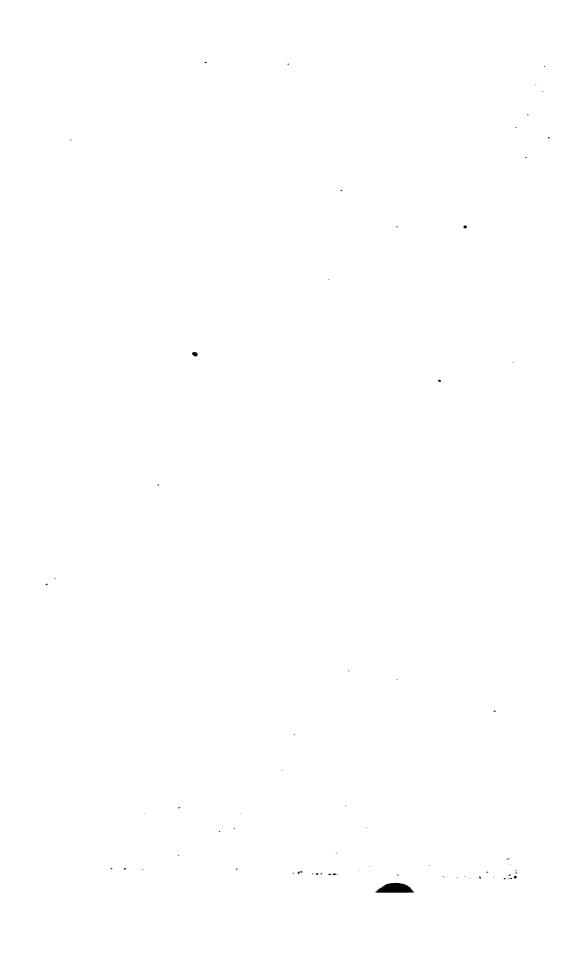
The tables following give respectively the average monthly prices of afred rada at works in Pennsylvania since 1868, and the market price of steel rada per tou in Great Britain.

AVERAGE MONTHLY PRICES OF STEEL RAILS AT WORKS IN PENNSYLVANIA. [Compiled by the American Iron and Steel Association. Averaged monthly from weekly quotations. Per ton of 2,240 pounds.]

Aver-Year. Jan. Feb. Mar. Apr. May. June. July. Ang. Sept. Oct. Nov. Dec. age. \$1674 1434 110 96 104 120 1174 71 65 49 414 42 85 62 55 120 98 \$165 \$165 \$1621 \$150 110 95 1041 121 1024 1031 118 120 753 107 130 h 101 h 105 h 1870 . 1144 1213 1154 1214 894 69 59 444 48 631 48 631 47 38 27 14 31 27 29 28 114 118 781 69 56 44 421 50 611 60 45 371 27 29 31 1201 120 120 751 65 1872 113 1202 983 69 62 49 42 42 42 75 63 523 34 26 34 31 32 33 34 117± 71 67 69 62 471 42 65 63 481 38 33 27 341 69 69 59 454 434 44 624 1874 . 1876 53 461 43 43 631 41 41 75 1877 . 1878 . 41 67 58 60 39 1880 59 42 35 28 48 38 30 27± 34± 38± 27 344 36 1884 34 27 341 391 311 271 35 32 1885 . 1886 . 34½ 31 27 38 35 1887 . 1888 . 30 274 29 1890 .

MARKET PRICE OF STEEL RAILS PER TON IN GREAT BRITAIN. [From The Economist (London) Monthly Trade Supplement of November 15, 1890.]

Date.	Steel rails.	Date.	Steel rails.	Date.	Steel rails.
1888. January 7 March 3 June 8 August 4 September 8 (totober 5 November 2 December 7.	19. 47 18. 25 18. 86 19. 16 18. 86	1889. January 4 February 2 March 1 April 6 May 4 June 8 July 6 August 3 September 10 October 5 November 2 December 6	18.55 20.38 22.51 21.81 23.20 28.12 24.94 25.55 32.85	1890. January 3 February 1 March 1 April 1 May 2 June 5 July 4 August 1 September 5 October 3 November 1	\$34. 07 32. 85 31. 63 30. 11 25. 25 23. 72 24. 55 25. 55 25. 85 25. 85



MISCELLANEOUS STEEL.

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MISCELLANEOUS STEEL.

The titles of Table VII and its sub-tables are as follows:

TABLE VII.—Cost of Production of Miscellaneous Steel at Various Establishments in Various States.

- A .- Period covered and quantity of product.
- B.—Quantity and cost of materials used.
- C.—Proportions of materials used.
- D.—General statement of cost for the period.
- E.—Elements of cost in one ton of 2,240 pounds.
- F.—Per cent. of each element of cost in one ton of 2,240 pounds.
- G .- Additional cost of certain theoretical elements.
- H.-Additional cost of certain theoretical elements in one ton of 2,240 pounds.

The tables include a great variety of products which show a great variety of costs. The quality of the product, which doubtless plays an important part in determining its cost, is not well defined in the reports obtained, and the description found in sub-table A is the best that could be done towards expressing it.

In general the remarks prefaced to Table IV, relating to miscellaneous iron products, are applicable here and should be read in connection with a study of these tables.

TABLE VII.—COST OF PRODUCTION OF MISCELLANEOUS STEEL AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT.

Es- tab- lish- ment		Period covered.	Miscellaneous steel produced.				
	Locality.	ocality. Terminal dates.		· Description.	Tons of 2.240 pounds.		
ber.	·	Terminal dates.	run- ning time.	Description.	Total.	Per day.	
1	Continent of Europe.	Apr. 1, 1888, to Mar. 31, 1889	(a)	Bauds (hoop steel)	(a)	(a)	
2	United States.	Jan. 1, 1889, to Dec. 31, 1889	(a)	Bars	2, 235	(a)	
3	do	Jan. 1, 1889, to Dec. 31, 1889	(a)	Bars (No. 1)	2, 227	(4)	
4	do		(a)	Bars (No. 14)	294	(a)	
5	do	Jan. 1, 1889, to Dec. 31, 1889	(a)	Bars (No. 2)		(a)	
6	do	Jan. 1, 1889, to Dec. 31, 1889	(a)	Bars (spike bars)	182	(4)	
7	Continent of Europe.	Jan. 13, 1889, to Apr. 6, 1889	70	Bars (small size)	133	2	
8	do	Jan. 13, 1889, to Apr. 6, 1889	70	Bars (large size)		3	
9	do		70	Bars (for springs)		11	
10	do		211	Bars, rods, fish plates, etc		31	
11	Great Britain	Apr. 1, 1888, to Sept. 29, 1888	(a)	Bars (tin plate)		(a)	
12	United States.		110	Billets	37, 160	338	
13	do		(a)	Billets (No. 2)	1, 242	(a)	
14	do	Jan. 1, 1889, to Dec. 31, 1889	(a)	Billets (No. 3)	6, 689	(4)	
15	do	Jan. 1, 1889, to Dec. 31, 1889	(a)	Billets (54 inch)	247	(a)	
16	do	Jan. 3, 1889, to Jan. 3, 1890	167	Billets and slabs	21, 916	131	
. 17	do	Jan. 7, 1880, to July 1, 1880	117	Rillets and nail slabs	25, 262	216	
18	Continent of Europe.	Jan. 13, 1880, to Apr. 6, 1889	70	Billets	1,618	23	

a Not reported.

TABLE VII.—COST OF PRODUCTION OF MISCELLANEOUS STEEL AT VARIOUS ESTABLISHMEN'S IN VARIOUS STATES—Continued.

A.—PERIOD COVERED AND QUANTITY OF PRODUCT—Concluded.

Es-		Period covered.		Miscellaneous steel produced.				
tab- lish- ment	Locality.	Terminal dates.	Days of run-	Description.	Tons of pour			
ber.		201111111	ning time.		Total.	Per day.		
19	Continent of Europe.	July 1, 1888, to June 30, 1889	100	Billets	6, 427	149		
20	do	Apr. 1, 1889, to Mar. 31, 1890		Billets and bars (for plates).	(a)	(a)		
21	do	Apr. 1, 1888, to Mar. 31, 1886		Billets and bars (for plates) .	(a)	(a)		
22	do	Apr. 1, 1889, to Mar. 31, 1800	1	Billets, bars, rails, and fish plates.	(a)	(a)		
23	do	Apr. 1, 1888, to Mar. 31, 1889		Billets, bars, rails, and fish plates.	(a)	(a)		
24	Great Britain.	Apr. 1, 1888, to Sept. 29, 1888		Billeta	6, 321	(a)		
25	United States.	Jan. 1, 18-9, to Dec. 31, 1889		Blooms	9, 669	604		
		Jan. 1, 1889, to Dec. 31, 1889	269	Blooms and billets	64, 684	240		
27	ando amore	Jan. 1, 188s, to Dec. 31, 1888		Blooms and biliets	52, 962	201		
23	do	Jan. 1, 1889, to Jan. 4, 1890		Blooms, billets, and nail	61, 240	308		
30	Continent of Europe.	Jan. 1, 1889, to Dec. 31, 1889 Jan. 13, 1889, to Apr. 6, 1889		Blooms, billets, and slabs Blooms	55, 036 17, 922	196 256		
31	Great Britain .	Apr. 1, 1888, to Sept. 29, 1889	138	Blooms	49,697	360		
22	do	Apr. 1, 1888, to Sept. 29, 1881	92	Blooms	11, 253	122		
23	60	July 29, 1889, to Aug. 3, 188	1 6	(hammered).	1, 511	273		
34	60	July 29, 1889, to Aug. 3, 1880		plates, and rods.	1, 896	345		
.35	United States.			Plates (boiler and ship)	448	1		
36	60	Jan. 1, 18-9, to Dec. 31, 188	(a)	Plates (light)	98	(a)		
37	46	Jan. 1, 1889, to Dec. 31, 1889	(a)	Plates (medium)	677	(a)		
-28	60	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	(a)	Plates (heavy)	511	(a)		
- 29	do	Jan. 1, 1889, to Dec. 31,188		Plates (railroad tie)	249	(a)		
80	da	Jan. 1, 1889, to Dec. 31, 188		Plates (railroad tie)		(a)		
	99			Plates (boiler and tank) Plates (boiler, bridge, and	6,004	4		
62	Continent of	July 1, 1888, to June 30, 188		Plates	866	14		
64		1888 (b)	. (a)	Plates	(a)	(a)		
65	60	Apr. 1, 1889, to Mar. 31, 189	0 (a)	Plates		(a)		
45	50	Apr. 1, 1888, to Mar. 31, 1881	(a)	Plates	13, 324	(a)		
165	40	Apr. 1, 1869, to Mar. 31, 1894	(a)	Plates (light)	(4)	(a)		
66	65	Apr. 1, 1848 to Mar. 31, 1880	(0)	Plates (light)	(a)	(a)		
		Apr. 1, 1889, to Mar. 31, 1890	(a)	Plates (heavy)	(a)	(a)		
.56	60	Apr. 1, 1888, to Mar. 31, 188 Apr. 1, 1889, to Mar. 31, 189	(a)	Plates (heavy)	(a)	(a)		
50	24	Apr. 1, 1888, to Mar. 31, 1889	(a)	Plates (inferior quality)	(a)	(a)		
	Count Beltain	Jan. 1, 1889, to June 30, 1881	(a) 138	Plates (inferior quality)	(a)	(a)		
54	y. can bellain	Ang 1 1888 to Sunt 10 188	122	Plates (fish)	13, 448	9		
24	Continent of Europe.	Apr. 1, 1888, to Sept. 29, 188 July 1, 1888, to June 30, 188	52	Railway ties		13		
96		Apr. 1, 1888, to Sept. 29, 188	8 (01	Railway sleepers	340	(4)		
30	Continent of Europe	Jan. 13, 1889, to Apr. 6, 188	9 69	Slabs				
58		July 1, 1888, to June 30, 188	256	Slabs (bammered)	19, 689	1		
34		July 1, 1888, to June 31, 188		Tires (locomotive and car-	4, 273			
159	Touted States	Jan. 1, 1889, to Dec. 31, 188	9 290	Wire	36, 797	12		
45,	-O4	Jan. 1, 1889, to Dec. 31, 188	9 299	Wire rods	26, 483			
II.	Estige.	July 1, 1888, to June 30, 188	170	Wire (undrawn)	4, 952			

e Net reported.

b Terminal dates not reported.

TABLE VII.—COST OF PRODUCTION OF MISCELLANEOUS STEEL AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

B.-QUANTITY AND COST OF MATERIALS USED.

[Establishments numbers 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 11, 24, 31 to 34, 53, 54, and 56 are in Great Britain.]

Estab- lish- ment num- ber.	Tons of 2, 240 pounds.				Cost.				
	Ingota.	Blooms.	Billets.	Other.	Ingots.	Blooms.	Billets.	Other.	Total.
1	(a)				(a)				(a)
		1, 297	1, 381		1-1	\$14, 492	\$41, 106		\$75, 59
		37	2, 467	b 108		1.034	85, 005	b \$1, 766	87, 80
			341			1,034	11, 916		11, 91
			603	ъэ	19372.633		21, 027	b145	21, 17
8			198				5, 254		5, 25
7	152				\$3, 598		Jan Don City		3, 59
8	152		211		40,000		4.466		4 4
0			c 807		0.00		4, 466 c 17, 278	(e)	17. 2
0	7, 502			(0)	143, 333			(e)	17. 2 143, 3
1	43, 396	2, 913		134111172		48, 616			48, 6
2	43, 396		133 2, 535		996, 984				996, 9
3		1, 203	133		220,200	32, 245 116, 730	3, 512 68, 788		35, 73
4	210	4, 373	2.535	b7	5, 226	116, 730	68, 788	b115	190, 8
5		264	-, -, -,			8, 204	68, 788		8.2
					563, 554	0,000			563, 5
7	28, 343				611, 495				611, 4
N		(d)			d31, 714	(d)			31, 7
9		7, 365			401, 114	125, 177			125, 1
0		1,000			(a)	120, 11,			(a)
1	(a)				(a)				(a)
<u> </u>	(a)				(a)				(a)
3	35, 030				566, 912				566, 9
4		8 537			300, 312	109 217			102, 3
5		0,007			257, 438	102,011			257, 4
ď	74, 130	********			1 550 760				1, 552, 1
7	61, 896								1, 304, 3
3	68, 700				1, 304, 300				
9	61, 200				1, 400, 018		*********		1, 495, 5
0	18, 145				1, 422, 900				1, 422, 0
1	51, 505				285, 380 724, 330				285, 3 724, 3
					724, 330				724, 8
2	12,100				170, 244				170, 2 e 35, 7
3				*********					635, 7
4					6 44, 775			*********	244.7
5	7 860	*******		*******	18, 540	********			18, 5
0	********	*******	110				3, 742		3, 7
		********	1 120	***********		*******	26, 566	/10,425	26. 5
8			176	1 355			6, 061	f 10, 425	16. 4
9	********	********	227		*********	********	7, 913 7, 128	*******	7, 9
0			206	*******	*********		1, 128	********	7, 1
1	7, 860 7, 500				213, 660 226, 500				243, 6
2	7, 500				226, 500			********	226, 5
3		*******		******			********		17, 3
4		(a)	(a)	(a)	(a)	(a)	(4)	(a)	(a)
5					(a)				(a)
6					280, 950				280, 9
7			********		(a)				(a)
8					(a)				(a)
9					(a)				(a)
0	(11)								(a)
1					(a)				(a)
9	(a)				(11)				(a)
3	21, 115				354, 975		********		354, 9
4		660	2, 903	0 32		11, 071	52, 996	9 319	64, 2
 .	8, 336	1			143, 609	1	1	1	143, 0
6		405			1	6, 339	52, 996	1	6.3
7	512	1			8, 842			1	8, 8
8	21, 973		1		379, 190			l	379 1
y				h 4, 525				A 99, 930	99, 9
:0			l	137, 754		1		1,627,973	1, 627, 9
il			29, 663				840, 427		640, 4
					1		109,097		10, 0
	,	1	,	1	1	1	1		

a Not reported.

b Scrap.

c The quantity and cost of other materials (ends) are inseparably combined with the quantity and cost of billets.

d The quantity and cost of bloome are inseparably combined with the quantity and cost of ingots.

This amount represents the total net cost of ingots; the gross cost of ingots is not reported.
 Slabs.

g Bad ingota.
A Steel.
i Steel rods.

TABLE VII.—COST OF PRODUCTION OF MISCELLANEOUS STEEL AT VARIOUS ESTABLISHMENTS IN VARIOUS STATES—Continued.

C .- PROPORTIONS OF MATERIALS USED.

[Establishments numbers 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 22, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 11, 24, 31 to 34, 53, 54, and 56 are in Great Britain.]

Establish- ment	Tounds of	f materials	to one ton	or produce.	Cost of materials per ton of 2,240 pounds.				
number.	Ingots.	Blooms.	Billets.	Other.	Ingots.	Blooms.	Billets.	Other.	
1	(a)				(a)				
2		1, 300	1, 384	La 150 rose de		\$26, 594	\$29, 765		
3		37	2 481	b 109		27, 946	34, 457	6 \$16. 355	
			2, 481 2, 508	0.100		21.010	34. 944	0 420. 00.	
			0 500	b 39			34, 871	b16.11	
		********	2, 593	0 29		**********		010.11	
0	*********	*******	2, 437	********	***********	*********	26. 535		
	2, 560	*******	*********		\$23, 671		**********		
8		**********	2, 569	*********	*********		21, 166	********	
9			# 2, 449	(c)			021.410	(c)	
0	2,549	2,421			18.954				
1	Chould think	2.421				16, 689			
2	2,616	7,77		100000000000000000000000000000000000000	22, 974	100000000000000000000000000000000000000		100000000000000000000000000000000000000	
3		2, 170	240	b 2		26, 804	26, 406		
	73			1.0	00 000		27. 135	b 16, 429	
·	73	1, 464	849	62	23. 863	26. 693	21. 145	0 10. 4.2	
5	******	2, 394	********	*******	****** ****	31, 076	********	********	
6	2,516				22, 893	*********	*********	********	
7	2,513				21.575				
8	d 2, 705	(d)			d 16, 230	(d)			
9	2.00	2, 567		000000000000000000000000000000000000000	1	16, 996			
0	741	-, 501			(a)	10.000			
	(a)					**********		********	
1	(a)	**********	*********	*******	(a)		*********	**********	
2	(a)	******	*******	********	(a)	********		********	
3	2, 660				16, 174	*********			
4	Continuent	2, 317				15.657			
5	2,463 2,567 2,618		25.11.11.11.11	10211111011	24, 216				
6	9 567				20, 938	100000000000000000000000000000000000000			
	2 010		*********		21, 073				
78	2,016	********		*******	21,741	********		********	
	2,516		*********	*********					
9	2,491	*********	********	*********	23, 250			********	
0	2,268				15, 728	********			
1	2, 321				14.063				
2	2,410	E440 1422197			14.063				
3	2,486				e 21. 295	C-C-2005	10000110000		
4	0,400	*********							
	2, 485		*********		0 21. 291	********			
5	2,575		*********		26. 000		*********		
6		*********	2, 514		*********	*********	34. 018	**** *****	
7			2, 548				34, 527		
8			772	11,550			34, 438	f 29, 36	
9			2, 582			1311123131	27, 571	A STATE OF THE	
0	**********		2, 535				34, 602		
1	0.050	********	2, 000	******	31,000		P4. 002		
	2,889	********	********	********		*********		********	
2	2, 800		**********	******	30, 200		*********		
3	2, 605		*********	******	17, 190	*******		********	
4	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	
5	(a)				(a)				
6	2,883			100000000000000000000000000000000000000	16, 385	2010/03/05	150000 1000	1.5	
7	(ai				(a)				
8		*******							
	(a)	*********			(a)	******	*******	********	
9	(a)	********			(a)		********		
0	(a)	*********			(a)	**********			
1	- (a)				(a)				
2	(a)				(a)				
3	3, 517				16. 812	100000000000000000000000000000000000000	11.00		
4	0,047	532	2,310	g 26	10.014	16, 774	18, 25G	9 9, 96	
	0.000		2, 310	920	17 900	10. 174	10, 230		
5	2, 627	2, GGA	*********	*******	17, 228	********	******	*******	
6	*********	2, GGA	*********	********	*********	15. 652	********		
7	2,757	*********	*********	*********	17, 270				
8	2, 500				17, 237				
9		S. Lat. 294 74.		A 2 37 3		100.00		A 22 08	
0		100000000000000000000000000000000000000		A 2, 372 1 2, 298				143, 12	
Commercial Commercial			0 500	0			29, 222	146, 12	
		********	2, 509 2, 475	********	*********	********		********	
A CONTRACTOR OF THE PARTY OF TH		2000 - 2000 - 2000	77 . 4 4 . 4			DOTE - Diverse	19.937		



a Not reported.

b Scrap.

This amount represents the net cost of ingots per ton; the gross cost of ingots p

D.—GENERAL STATEMENT OF COST FOR THE PERIOD.

(Establishments numbers 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 48 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 11, 24, 31 to 34, 53, 54, and 56 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.)

stab-		Materials			1000		A		
nent num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	\$75, 598	\$4, 303	\$71, 295	\$13, 212	8773	\$2,573	\$1, 280	8413	\$89, 54
	87, 805	3, 171	84, 634	22, 265	1,830	2, 997	1, 558	976	114, 26
*****	11, 916	383	11,533	3, 016	242	513	206	129	15, 63
	21, 172	716	20, 456	5, 640	428	943	365	228	28, 05
	5, 254	124	6, 130	1,076	63	193	104	34	6, 60
	3, 598	154	3, 444	b 398	(b)	286	b 168	(6)	b 4, 58
	4, 466	239	4, 227	8410	(b)	230	b 229	(6)	b 5, 40
	17, 278	511	16, 767	ð 1, 466	(6)	861	b 975	(b)	b 20, 59
	143, 333	6, 698	136, 635	11, 576	1, 170	3,023	17, 091	179	169, 67
	48, 616	1, 845	46, 771	3, 585	101	1.333	1,810	43	53, 65
	996, 984	72, 303	924, 681	60, 322	11, 225	18, 191	10, 935	3, 300	1, 028, 65
	35, 757	527	35, 230	5, 247	430	1,467	711	220	43, 31
	190, 850	4, 299	186, 560	31, 956	2, 313	7,355	3, 830	1,233	233, 24
	8,104	112	8, 092	1,043	85	259	141	45	9, 66
	563,554	1,949	561, 605	27,945	2, 850	5,114	9, 122	497	607, 13
	611, 495	8, 648	602, 847	29,855	3, 288	7,868	25. 030	651	669, 53
	31,714	3, 535	28, 179	b 633	(b)	663	6 545	(b)	b 30, 32
	125, 177	6, 478	118, 699	5, 334	591	1,777	6, 176	90	132, 66
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	566, 912	40, 175	526, 737	53, 547	d34, 685	6, 140	21, 342	(e)	d 642, 45
	102, 347	898	101, 449	5, 641	237	3, 694	4, 268	100	115, 38
	257, 438	12, 365	245, 073	13, 869	3, 500	2, 984	3, 559	88	269, 07
25.0	1, 552, 169	21, 445	1,530,724	80, 989	5, 551	17, 598	17, 835	531	1, 653, 22
	1, 304, 360	4,072	1,300,288	58, 694	4, 973	14, 266	19, 359	525	1, 398, 10
	1, 495, 578	2, 548	1,493,030	79, 947	3,505	19, 060	21,026	6, 375	1, 622, 94
	1, 422, 900	33, 385	1, 389, 515	59, 941	12,000	35, 766	38,713	1,500	1, 537, 43
	285, 380	834	284, 546	e 2, 779	(e)	2, 834	e 3, 339	(e)	e 296, 56
	724, 330	5, 738	718, 592	20, 278	1, 255	20, 393	17,288	147	777, 95
		5, 703	164, 541	9, 654	423	6, 348	7,598	178	188, 74
	(a)	(a)	35, 712	1, 206	15	174	f 735	(n)	37, 34
	(a)	(a)	44,775	4, 016	119	695	f1,384	(n)	50, 98
	18, 540	1,030	17,510	2, 832	224	627	112	167	21, 47
	3, 742	89	3, 653	1, 111	83	159	93	44	5 1
	26, 586	884	25, 702	6, 183	576	1, 121	644	307	34, 50
	16, 186	43	16, 437	4, 067	436	876	487	232	22, 50
	7, 913	379	7, 534	1, 474	86	516	143	46	9, 79
	7, 128	227	6,901	1, 668	155	172	173	83	9, 15
	243, 660	26, 880	216, 780	49, 192	3, 473	8, 882	8, 873	587	287, 78
	226, 500	12,000	214, 500	34, 725	6,000	15, 000	18, 000	1, 800	200, 03
		1,003	16, 307	799	85	255	953	13	18, 41
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	280, 950	37, 574	243, 376	45, 688	c 18, 880	7, 288	16, 175	(c)	d 331, 40
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(4)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)

a Not reported.

b In establishment number 7, general expenses amounting to \$169, and expenses on bars amounting to \$117, and in establishment number 8, general expenses amounting to \$145, and expenses on bars amounting to \$161, and in establishment number 9, general expenses amounting to \$189, and expenses on bars amounting to \$181, and in establishment number 12, general expenses amounting to \$308, are included in the totals, but are not included elsewhere. The former (general expenses) covers taxes and insurance, and includes a part of the pay of officials and clerks, together with a small amount properly chargeable to labor and to supplies and repairs; the latter (expenses on bars) embraces a part of the pay of officials and clerks and of labor. The office has no knowledge of the proper segregation in these cases. gation in these cases.

c The expenditures for taxes and insurance are inseparably combined with those for officials and clerks.

d Including insurance. a incurrence.

a Giverral expenses, amounting to \$1,070, are included in the total, but are not included elsewhere:
the item covers taxes and insurance and includes a part of the pay of officials and clerks, together
with a small amount properly chargeable to labor and to supplies and repairs. The office has no knowledge of the proper segregation in these cases.

The expenditures for taxes are inseparably combined with those for supplies and repairs.

D.-GENERAL STATEMENT OF COST FOR THE PERIOD-Concluded.

[Establishments numbers 2 to 6, 12 to 17, 23 to 29 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 1, 24, 31 to 34, 53, 54, and 56 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Estab-	- 0	Materials.							
lish ment num- ber.	Gross.	Value of cinder, scrap, etc.	Net.	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
53 54	\$354, 975 64, 386 143, 609	\$78, 606 8, 518 10, 995	\$276, 369 55, 868 132, 614	\$59, 401 10, 174 7, 839	\$914 105 675	\$29, 843 2, 313 2, 118	\$20, 282 1,875 15, 721	\$180 44 107	\$386, 989 70, 379 159, 074
56	6, 339 8, 842	574 934	5, 765 7, 908	994 a 770	(a) 13	231 876	177 a 250	(a) 2	7, 182 a 10, 246
59	99, 930	13, 900 855	365, 290 99, 075	18, 015 7, 589	1,792 675	6, 023 2, 681	12, 621 8, 127	276 107	404, 017 118, 254
60 61 62	1, 627, 973 840, 427 109, 097	15, 891 3, 049	1, 627, 973 824, 536 106, 048	533, 206 88, 494 13, 861	24, 00) 12, 000 753	59, 592 5, 127	99, 323 10, 859 9, 934	1,000 1,500 119	2, 365, 867 996, 981 135, 842

a General expenses, amounting to \$364, and expenses on alabs, amounting to \$78, are included in the total, but are not included elaswhere; the former (general expenses) covers taxes and insurance, and includes a part of the pay of officials and clerks, together with a small amount properly charge-able to labor and to supplies and repairs: the latter (expenses on slabs) embraces a part of the pay of officials and clerks and of labor. The office has no knowledge of the proper sugregation in these cases.

E.-ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 11, 24, 31 to 34, 53, 54, and 56 are in Great Britain. Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

			1	Laterial	8.			-	100	14			
Estab- lish- ment			Gross.			Value of		La- bor.	Offi-	Fuel.	Sup- plies and	Taxes	Total
ber.	Ingots	Blooms	Bil- lets.	Other.	Total.	der, scrap, etc.	Net.	001.	cl'ks.		re- pairs.		
1	\$20, 618				\$20,618	\$1, 872	\$18,746	\$2, 363	a\$1.069	80, 220	\$0, 592	(a)	b \$22, 990
2		\$15, 432	\$18, 392			1. 925	31. 899			1. 151		\$0. 185	40, 063
			38, 170		39, 428	1. 424		9. 997	. 822	1,346			51, 30
			40, 531		40, 531		39, 228	10. 258	. 823	1,745		. 439	53. 19
5			40, 359	0.278	40, 637			10, 825	. 821	1.808	. 701	. 438	53, 85
6			28, 868		28, 868		28, 187		. 346	1.061	. 571	.187	36, 26
7	27, 053				27, 053	1, 158	25, 895		(d)		d 1, 263	(d)	d 34. 45
8	-10,777		24. 272		24, 272		22, 973		(d)		d 1. 245	(4)	d 29, 35
9			e23, 412	(e)	23, 412		22, 720		(d)		d 1. 321	(d)	4 27, 91
0	21, 570				21.570		20, 562		. 176			. 027	25, 53
		18, 039		(3.2.2)	18, 039	. 684	17, 355		. 037	.495	. 675		19, 90
3	26, 830						24, 884		. 302	. 490	. 294		27. 68
		25, 962	2, 828		28, 790	. 424	28, 366		. 346		. 572		34. 87
4	. 781	17, 451	10. 284	c.017	28, 533	. 643	27, 890		,346		. 573	. 184	34. 87
		33, 215		1.32323	33, 215		32, 761	4. 223	. 344	1.049	. 571	. 182	39. 13
					25, 714	. 089	25, 625		. 130	. 233	. 416	. 023	27. 70
7	24, 206	100000			24, 206		23, 864		. 130	.311	. 991	.026	26, 50
8	/19.601	10		200000	19, 601	2, 185	17. 416		(d)	.410	d. 337	(d)	d18.74
		19, 477			19, 477	1.008	18. 469		. 092	. 276	. 961		20, 64
					18. 613		17. 612		al. 250	. 152	. 648		b 20, 88
1				25.70.01	18. 378	. 912	17.406		al. 153	. 208	. 561	(a)	b 20, 47
2	19. 106			1823	19, 106		17. 836	1.804		. 157	. 716	(a)	b 21, 80
3	19. 205				19, 205		17. 844	1, 814	a1. 175	.208	723		b 21. 76
1		16 102			16, 102	. 142	16. 050	. 892	. 038	. 584	. 675	.016	18, 25
5	26, 625	10.10.			26, 625	1, 279	25. 346	1. 434	. 362	. 309	.368	.009	27, 82
6	23. 996					. 331	23. 665	1. 252	. 086	. 272	. 276	.008	25, 55
7						. 077	24. 551	1, 108	. 094	. 269	.366		26. 39
8					24. 422	.042	24, 380	1. 306	. 057	.311	. 343	.010	26, 50
9					25, 854	. 607	25, 247	1.089	. 218	. 650	. 704	.027	27, 93
0					15. 923	.046	15, 877	g. 155	(g)	. 158	g. 186		g 16. 54
1					14. 575	. 115	14, 460	. 408	.025	410	.348	(9)	15, 65
2					15, 129	. 507	14. 622	. 858	. 038	. 564	. 675	. 016	16, 77
3					(h)	(h)	23. 635	. 798	. 010	. 115	4. 486		25.04
4					(h)	(A)	23, 615	2. 118	.063	.367	1. 730	(6)	26, 80
5	41 224				41. 384	2, 299	39, 085	6. 321	. 500	1. 400	. 250		
			20 100									, 373	47, 929
			39. 271		38. 183 39. 271	. 908	37. 275 37. 965		. 847	1. 622	.949	. 449	52. 479
				/20 /01		1.306		9. 133	. 853		. 951	. 453	51. 00
			21 770	120.401	32, 262 31, 779	1. 522	32. 166	7. 959	. 853	1. 715	. 953	. 454	44, 100
				******			30. 257	5. 920	.852		. 574	. 185	39, 350
					39. 165	1. 247	37. 918	9. 165	. 802	. 945	. 950	. 456	50, 286
1	39, 984				39.984	4. 411	35, 573	8. 072	. 570		1. 456	. 096	47. 225
2	37. 750				37. 750	2.000	35. 750	5, 788	1.000		3.000	. 300	48, 338
3	19, 988				19, 988	1, 158	18,830	. 923	.098	. 294	1, 101	. 015	21. 261

s The expenditures for taxes and insurance are inseparably combined with those for officials and clerks.

b Including insurance.

[&]amp; Including insurance.

« Sorap.

d In establishment number 7, general expenses, amounting to \$1.271 per ton, and expenses on bars amounting to \$8 cents per ton, and in establishment number 8, general expenses amounting to 78.3 cents per ton, and expenses on bars amounting to 87.5 cents per ton, and expenses on bars amounting to 70.3 cents per ton, and expenses on bars amounting to 19.5 cents per ton, and in establishment number 18, general expenses amounting to 19 cents per ton are included in the totals, but are not included elsewhere; the former (general expenses on bars amounting to 19 cents per ton are included at the totals, but are not included elsewhere; the former (general expenses on bars) embraces and insurance, and includes a part of the pay of officials and clerks, together with a small amount [properly chargeable to labor and to supplies and repairs; the latter (expenses on bars) embraces a part of the pay of officials and clerks and of labor. The office has no knowedge of the proper segregation in these cases.

§ The expenditures for other materials (ends) are inseparably combined with those for billets.

§ The expenditures for blooms are inseparably combined with those for ingots.

§ General expenses amounting to 17.1 cents per ton are included in the total, but are not included elsewhere; the item covers taxes and insurance, and includes a part of the pay of officials and clerks, together with a small amount properly chargeable to labor, and to supplies and repairs. The office has no knowledge of the proper segregation in these cases.

A Not reported.

A Not reported.

i The expenditures for taxes are inseparably combined with those for supplies and repairs.

i Slabe.

- - - - - - outcased with those for officials and

ı

and the control of the proper segregation

F.—PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe; and numbers 11, 24, 31 to 34, 53, 54 and 55 are in Great Britain. This table is based on the preceding one, and to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader is reterred to that table for such information as they furnish.]

Estab- lishment number.	Materials (not).	Labor.	Officials and clerks.	Fuel.	Supplies and repairs.	Taxes.	Total.
1	81, 54	10. 28	4. 65	. 96	2, 57		100
2	79. 62	14. 75 19. 49	. 87 1. 60	2. 87	1.43 1.37	.46	100
3	74. 07	19. 49	1.60	2, 62 3, 28	1.37	.83	100
· · · · · ·	73, 7 <u>4</u> 72, 90	19. 28 20. 10	1.55 1.53	3. 28 3. 3 6	1.32 1.30	. 83 . 81	100 100
6	77. 73	16.30	.95	2.93	1.57	52	100
7	75. 16	8. 69		6. 24	2.67		100
8	78. 25	7.59		4. 26 4. 18	4.21 4.73		100
9	81. 40	7. 12		4.18	4.73		100
10	80. 53	6. 82	. 69	1.78	10.07	.11	100
11	87. 18 89. 89	6. 68 5. 87	. 18 1. 09	2. 49 1. 77	3, 39 1, 06	. 08	10 0 10 0
13	81. 34	12.11	99	3. 39	1.64	.53	100
14	79. 98	13.70	. 99	3. 16	1.64	.53	100
15	83. 72	10.79	.88	· 2.68	1.46	47	100
16	92, 50	4.61	.47	. 81	1.50	.08	100
17	90. 04	4. 40	.49	1. 17	3.74	.10	100
18	92. 91 89. 47	2.09 4.02	. 45	2. 19 1. 34	1.80 4.65	.07	100 100
20	84. 34	5.84	5.90	. 73	3. 10	.01	100
21	85. 32	5. 27	5. 63	1. 02	2, 76		100
22	81.79	8, 27	5, 94	. 72	3. 28 3. 32		100
23	81. 99	8. 33	5. 40	. 96	3.33		100
24	87. 92	4. 88	. 21 1. 30	3. 20	3.70	.00	100
25	91. 08 92. 59	5. 16 4. 90	1.30	1.11 1.06	1. 32 1. 08	.03	100 100
27	93.00	4.20	.35	1.02	1.39	.04	100
28	92.00	4. 93	. 22	1.17	1.29	.39	100
29	90. 38	3.90	.31 .35 .22 .78	9 33	2.53	.09	100
30	95, 95 92, 37	. 94		. 96	1.12		100
31	92. 37	2.61	. 16	2, 62	2, 22	.02	100
32 33	87. 18	5. 11	.23 .04	3. 36	4.02	.10	100
33	94. 37 87. 81	3. 19 7. 88	.04	. 46 1. 37	1.94 2.71		100 10 0
35	81.55	13. 19	. 23 1. 04	2.62	.53	.78	100
36	71.03	21.60	1.61	3.09	1.81	. 86	100
37	74.43	17.90	1.67	3. 25 3. 89	1.86	j .89 j	100
38	72.94	18.05	1. 93	3. 89	2.16	1.03	100
39	76.89	15.04	.88	5. 26	1.46	.47	100
41	75, 40 75, 33	18. 23 17. 09	1. 69 1. 21	1. 88 3. 09	1.89 2.08	.91	100 100
42	73. 96	11.97	2.07	5. 17	6.21	.62	100
43	88, 57	4.34	. 46	1. 38	5.18	.07	100
44	78, 45	9. 89	2. 43	6. 91	2.33 3.77		100
45	73. 03	14. 87	. 46 2. 43 6. 10	2. 23 2. 20	3.77		100
46	73, 44	13. 78	5.70	2. 20	4.88		100
47	68, 81 71, 20	20. 37 17. 31	5. 44 5. 18	1. 94 1. 92	3. 37 4. 39		100 100
42	73. 33	14.40	6. 19	2. 26	3.83		100
50	73. 98	13. 08	5. 80	2. 22	4 93		100
51	74, 96	12.64	6, 30	2, 20	3.90		100
52	73. 89	12.86	5.86	2. 31	5, 08		100
53	71.41	15.35	.24	7.71	5. 24	. 05	100
34	79. 38	14.46	.15	3, 29 1, 33	2.66	.06	100
55 56	83, 37 80, 27	4, 93 13, 84	. 42	1. 33 3. 21	9. 88 2. 47	.07	100 100
57	77. 18	7. 52	l	8. 55	2.44		100
58	90. 12	4.46	.44	1 10	3, 12	.07	100
59	90. 42 83. 78	6. 42	. 44	2. 27	6, 87	.09	100
60	68. 81	22, 54	1.01	3. 40	4.26	.04	100
61	82.70	8.88	1. 20	5.98	1.09	.15	100
62	78.07	10. 20	. 56	3.77	7. 31	.09	100

G. ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Sistablishments members 2 to 6, 12 to 17, 25 to 29, 35 to 42, 60, and 61 are in the United States, numbers 11, 7 to 18, 14 to 22, 38, 43 to 52, 53, 57 to 56, and 62 are on the continent of Europe; and numbers 11, 34, 21 to 28, 38, 54, and 56 are in Great Britain.]

			Additio	nal cost.	
Zensklichment number.	Incurat	200.	Interest.	Depreciation of value of plant.	Total.
	(4)		ł		(e)
	(-,	270	\$1, 997		SL 3
		165	2 225		7
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	i	\$70 165 22 38	1 287		7
		28	685		7
~ ~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		•	101		7
	(e)		(a)	(e)	(e)
	(a) (a)		(a)	(e)	(a)
	(a)	_	(e)	(4)	(e)
~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(4)	73	(6)	(4)	1=4
	(4)	400	(a) 12,067	1 467	(4)
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			667 2,700 137		-
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		39	3.70		
			137		~ i
				1	
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
	(e)		(a) (a)	(4)	(4)
,.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		39	(e)	(a)	
,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(a)]i	(e)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(a)				(6)
. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(a)				(e) (e)
	(a)				(41)
	(6)	100	(a) 3,257	· (48)	(4)
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		TOR	2, 23 (3,1
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		••••			
,,,,,		. ***	4 373		6 3
	1			\$15, 800	X.
	(e)		(a)	· •6.1	46)
			· · · · · · · · · · · · · · · · · · ·		
		••••	. · c)	ĝ Œ .1	(a)
		• • • • ·	(4)	(C)	163
		••••	(a)	(e)	(4)
· · · · · · · · · · · · · · · · · · ·		34	(5)	141	•
		50	122		1
		ŝ			
		7	38		;
		14	14. 13a 81		30,
		196	نقه ۵:		30 2
		34			
.,,		5	•44	(C)	1
	(a)		-43	141	
	(4)				
	(6)		ره.	(41)	(41)
	(6)		•••••	**********	***
	: E)		••••••		9 6 23
	16/				
,	(6)				,—
	(4)			***********	=
	•	35	- 41		
	 .		4/	-	, may _
		63	41	-	· · · •
					183
	: e	····	81	~	
	: e	::3	Ξ.	2	3 1
	•	13			3 1
	ı	SW	Ξ.	2 M	31 31.3
	•	13	Ξ.	N Z N	91.

⁶ Inc reserve.

6 Inc manusing interest and deprecutive of value of plant.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

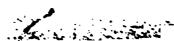
[Establishments numbers 2 to 6, 12 to 17, 25 to 29, 25 to 42, 60, and 61 are in the United States; numbers 1, 7 to 10, 18 to 23, 30, 43 to 52, 55, 57 to 59, and 62 are on the continent of Europe and numbers 11, 24, 31 to 34, 53, 54, and 56 are in Great Britain.

		Additional	cost per ton.	
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.
1	(a)			(a)
2	\$0,031	\$0.554		\$0,58
3	. 074	1, 315		1. 38
4	.075	1,316		1.30
5	. 073	1, 315		1.38
6	. 033	, 555		. 58
7	(a)	(a)	(a)	(a)
8	(a)	(a)	(a)	(a)
9	(a)	(a)	(a)	(a)
0	.011	(a)	(a)	6.01
l	(a)	(a)	(a)	(a)
2	.011	.341		. 35
3	. 031	. 553		. 58
	.031	, 553		. 58
	. 032	. 555		. 58
6	************			
7	********			
8	(a)	(a)	(a)	(a)
9	. 006	(a)	(a)	b. 00
0	(a)			(a)
l	(a)			(a)
2	(a)			(a)
B	(a)			(a)
L	(a)	(a)	(a)	(a)
5	. 010	. 340		. 30
6				
7	************			
8		. 104		.10
0	.018		\$0.273	. 20
0	(a)	(a)	(a)	(a)
I				
2		(a)	(a)	(a)
3		(a)	(a)	(a)
		(a)	(a)	(a)
5	.112	(a)	(a)	b. 11
6	.072	1.357		1.43
	.077	1.362		1.43
8	.076	1. 364	***********	1.44
0	.032	. 554		. 58
	.077	1.363		1.44
	. 038	1. 720		1.75
2	. 150			. 10
3	.006	(a)	(a)	6.00
	(a)	(a)	(a)	(a)
5	(a)			(a)
	(a)	(a)	(a)	(a)
	(a)			(a)
	(a)	***********	***********	(a)
	(a)			(a)
	(a)	***********		(a)
·····	(a)			(a)
	(a)			(a)
	.002	(4)	(a)	8.00
	***********	(a)	(a)	(a)
	.006	(a)	(a)	6.00

8	(a)	(a)	(a)	(a) b.00
9	.006	(a)	(a) (a)	b. 01
0	.010	(a)	(4)	.73
1	. 041	************	.735	.79
	.038	(a)	(a)	8.01

[&]amp; Not reported.

H. Ex. 265---13



b Not including interest and depreciation of value of plant,



BITUMINOUS COAL

195



BITUMINOUS COAL.

The titles of table VIII and its sub-tables are as follows:

TABLE VIII .- Cost of Production of Bituminous Coal at Various Mines in Various States.

- A .- Period covered and description of mine.
- B.—The miner and the product.
- C.—Chemical analysis of coal (per cent.)
- D.—General statement of cost for the period.
- E.—Elements of cost in one ton of 2,000 pounds.
- F.—Per cent. of each element of cost in one tou of 2,000 pounds.
- G.—Additional cost of certain theoretical elements.
- H.-Additional cost of certain theoretical elements in one ton of 2,000 pounds.

In sub-table A, under the heading kind of mine, the answers shaft, slope, or drift have been inserted. These answers, together with those giving the depth of shaft, distance from surface to working point, and thickness of vein, will indicate in some degree the relative difficulties of mining in the different establishments.

In sub-table B are shown the amounts paid out by the miner for tool sharpening, oil, gunpowder, and other purposes. These items are necessary to be considered in comparing the labor cost of mining in different mines. In some cases (particularly in foreign countries) these expenses are borne by the establishment, and would be charged under supplies, but the general rule in this country seems to be to pay a gross sum per ton to the miner, out of which he shall pay, or suffer a deduction for, these charges, so that the labor cost of mining in such cases represents the amount paid for labor and for such supplies, and would not be comparative with the cost in an establishment which furnishes these things. In this respect coal mining seems to differ from ore mining or limestone quarrying, in which the powder, etc., are very generally, if not always, furnished by the establishment. In this same table are also shown the number of tons of coal mined per miner per week, and the price paid per ton for tons of the size used as a measure at each particular mine, as well as the output per miner per week in tons of the uniform size of 2,000 pounds.

Sub-table O shows the chemical analysis of the coal as reported by the establishment. As will be apparent upon examination these analyses were not all made upon the same basis, some being made before and some after evaporation of the moisture.

In sub tables D and E, relating to the cost of the product. It will be noticed that there is a column headed value of semenings, when a used as a credit against total cost. This is applicable miy n mues producing lump coal, and shows (D) the estimated usual water and E the estimated value per ton of product of the fine comi which passes through the agreens and for which the miner receives no page. As this sual has a value it is manifestly proper to credit it against our. Of comean, atrictly apeaking, this credit for screenings should be distrib-Hiell perpertionally among the various elements of cost. But it was impossible to do this and at the same time preserve the action mu-Althors so to payment of miners, etc., under which the operations of the withou were conclusted. In these same tables the reader will not full me soldies considerable variations in the costs of coal apparently mined in the come locality and, so far as the tables show, under penetically the name would know. The explanation for these differences in such causes may be partially in the varying economy of administration. Dut is deadelines whichly thus he entural advantages or disadvantages which do not had full appared in the reports received; the amount of since in the vielle of cond, character of the roof, the conditions as to meisture and many other elementances have effect in determining the amount of delighted for intil the consequent cost.

In such table it, showing the per cent, of each element of cost in this kin, it will be noticed that the column of deductions for value of approximate how town neglected and that the percentages are based on this properties that four this was done because the details would otherwhole they must than 100 per cent, followed by a reduction to 100 per tent on apparatus of the opalit for acreenings, whereas if it were possible to have properly divided the credit for acreenings among the several than the thirt telepity amounts could scarcely have been disturbed.

the high two and tables (It and II), relating to insurance, interest, depreident many the value of the plant, and royalty to the owners of the soil attended, transministry. The remarks made as to this class of items in the transition producting to the pig from tables are applicable here.

Table VIII.—COST OF PRODUCTION OF BITUMINOUS COAY, AT VARIOUS MINES IN VARIOUS STATES.

A .- PERIOD COVERED AND DESCRIPTION OF MINE.

Es-		Period covered.	- 21			From	Thick-	10-
tab- lish- ment num- ber.	Locality.	Terminal dates.	Days of run- ning time.	Kind of mine.	Depth of shaft (feet).	face to work- ing point (feet).	****	Size of screen (inches).
1	United States.	Sept. 1, 1888, to Aug. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Feb. 1, 1889, to Jan. 31, 1890	213	Shaft	(a)	2,500	56	None uses
3	do	Jan. 1 1889 to Dec. 31 1889	312 296		(b) 375	(e)	(1)	Noneuse
4	do	Feb. 1, 1889, to Jan. 31, 1890	301	Drift		(c)	(0)	210110 0000
5	do	Feb. 1, 1889, to Jan. 31, 1890	(h)	(d)	(i)	(1)	54	Noneuse
6	do	Feb. 1, 1889, to Jan. 31, 1890 Jan. 1, 1890, to Jan. 31, 1890	24	Shaft	75	(j) 1,000	30	None use
7 8	do	May 1, 1888, to Apr. 30, 1889 May 1, 1888, to Apr. 30, 1880 May 1, 1888, to Apr. 30, 1880 July 1, 1888, to June 30, 1880	190	Shaft	460	1,427	42	10000
9	do	May 1, 1888, to Apr. 30, 1889	198 206	Shaft	100	2,640 1,427	42 36	
10	do	July 1, 1888 to June 30, 1889	184	Shaft	146	1,700	78	None use
11	do	Jan. 1, 1859, to Dec. 31, 1859	240	Shaft	470	2,640	42	inches:
12	do	Jan 1 1889 to Dec. 31 1889	202	Shaft	114	900	78	Noneuse
13	do	Jan. 1, 1889, to Dec. 31, 1889	150	Shaft	245	1, 320	72	
15	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	192 249	Shaft	350 240	2,500 1,427	84 72	
16	do	Jan. 1, 1889 to Dec. 31, 1889	212	Shaft	250	2, 300	72	
17	do	Jan. 1, 1889, to Dec. 31, 1889 July 1, 1889, to Dec. 31, 1889 July 1, 1889, to Dec. 31, 1889	100	Shaft	205	(k)	72	
18	do	July 1, 1889, to Dec. 31, 1889	131	Shaft	612	1, 320	- 48	
19	do	OCE 1, 1000, to OCE 01, 1000	22	Shaft	115	1, 427	38	
20	do	Oct. 1, 1889, to Oct. 21, 1889	20	Shaft	90	1, 320	36	
21 22	do	Nov. 1, 1889, to Nov. 30, 1889 Nov. 1, 1889, to Nov. 20, 1889	15	Shaft	100	1, 427	42 30	
23	do	Nov. 1 1889 to Nov. 70 1889	20	Shaft	460	1, 427 2, 640	42	
24	do	Nov. 1, 1889, to Nov. 20, 1889	17	Shaft	100	3, 960	57	
25	do	Nov. 1, 1889, to Nov. 30, 1889 May 1, 1888, to Apr. 30, 1889	151	Shaft	65	1, 320	60	W. 18
26	do	May 1, 1888, to Apr. 30, 1889 Jan. 1, 1889, to Dec. 21, 1889	177	Shaft	95	660	60	None use
27	do	Jan. 1, 1889, to Dec. 21, 1889	200	Shaft	85	900	54	
28 29	do	Jan. 1, 1889, to Dec. 31, 1889	200 155	Shaft	95 25	3, 960	72 78	
30	do	Jan. 1, 1889, to Dec. 21, 1889 Jan. 1, 1889, to Dec. 21, 1889	191	Shaft	80	900	66	
31	do	Jan. 1, 1889, to Dec. 31, 1889	116	Shaft	230	900	72	
32	do	Jan. 1, 1889, to Dec. 31, 1889	157	Shaft	65	1, 320	60	
33	do	Aug. 7, 1889, to Dec. \$1, 1889	87	Shaft	55	600	48	
34	do	Sept. 1, 1889, to Dec. 31, 1889	230	Shaft	75	4,620	78	¥
36	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	160	Slope		1,000	126 168	None use
37	do	Jan. 1, 1889, to Dec. 31, 1889	260	Slope		1,320	120	None use
38	do	Dec. 1, 1889, to Dec. 31, 1889	20	Slope		5, 280	120	None use
39	do	Dec. 1, 1889, to Dec. 31, 1889	22	Slope		3,000	120	None use
40	do	July 1, 1888, to June 30, 1889	165	Shaft	140	2,000	36	
41	do	Jan. 1, 1889, to Sept. 30, 1889	156	Shaft	170	2,640 1,200	72 46	1
43	do	Jan. 1, 1889, to Sept. 30, 1889 Jan. 1, 1889, to Oct. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	340	Drift Shaft	50	2,640	108	
44	do	Jan. 1, 1889, to Dec. 31, 1889	144	Drift		2, 640	48	
45	00	3 HIL. 1, 1008, to Dec. 31, 1008	149	Shaft	60	120	66	
46	do	Jan. 1, 1889, to Dec. 31, 1889	150	Shaft	(1)	(11%)	(n)	
47	do	Jan. 1, 1889, to Dec. 31, 1889	150 153	Shaft	100	2, 640	(0)	
48	do	Jan. 1, 1889, to Dec. 31, 1889	156	Shaft	45	1, 320	60	
50	do	Jan. 1, 1889, to Dec. 31, 1889	156	Drift		1,500	36	
51	do	Jan. 1, 1889, to Dec. 31, 1889	162	Drift		3, 960	72	
52	do	Jan. 1, 1889, to Dec. 31, 1889	164	Shaft	132	900	48	
53	do	Jan. 1, 1889, to Dec. 31, 1889	166	Shaft	70	2,200	48	
54	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	174	Shaft	80	2,000	54 54	
56	do		171	Shaft	(p)	1,400	66	
57	do	Jan. 1, 1889, to Dec. 31, 1889	180	Shaft	(p) 90	1,590	72	
58	do	Jan. 1, 1889, to Dec. 31, 1889	180	Shatt	170	2,500	(9)	
59	do	Jan. 1, 1889, to Dec. 31, 1889	180	Shaft	90	1, 950	(r)	
60	do		182	Shaft	157	1,057	48 66	
61	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	186	Drift Shaft	125	3,960	46	
63	do	Jan. 1, 1889, to Dec. 31, 1889	212	Drift			48	

a From 400 to 500 feet.
b From 200 to 300 feet.
c Not reported.
d Slope and shaft.
c In slope, 2,000 feet; in shaft, not reported.
f 36 and 72 inches.
f From 34 to 48 inches.
A Vary in different mines, ranging from 250 to 308 days.
From 100 to 350 feet.

j From 1.000 to 4.000 feet. k From 1.500 to 2.000 feet. k From 2.000 to 3.000 feet. m From 2.000 to 3.000 feet. m From 72 to 90 inches. e From 48 to 72 inches. p From 20 to 150 feet. q From 30 to 66 inches. r From 48 to 54 inches. From 175 to 725 feet.

A .- PERIOD COVERED AND DESCRIPTION OF MINE-Continued.

Es-		Period covered.				From	Thick-	
lish- ment num- ber.	Locality.	Terminal dates.	Days of run- ning time.	Kind of mine.	Depth of shaft (feet).	face to work- ing point (feet).	of vein (inch- es).	Size of screen (inches).
64 65	United States.	Jan. 1,1889, to Dec. 31,1889	218 226	Drift		3, 960	72 56	1
66	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	226	Shaft	120	2,700	60	1
67	do	Jan. 1, 1889, to Dec. 31, 1889	234	Shaft	135	1,600	72	1
68	do	Jan. 1, 1889, to Dec. 31, 1889	240	Drift		1,500	48	1
69 70	do		250 251	Shaft Drift	110	3, 500 1, 200	66 57	1
71	do	Jan. 1, 1889, to Dec. 31, 1889	253	Shaft	65	2 500	48	i
71 72 73 74	do	Jan. 1, 1889, to Dec. 31, 1889	280	Shaft	175	5, 280	60	1
73		Jan. 1, 1889, to Dec. 31, 1889	282	Drift	*****	(a)	42	1
74	do	Jan. J, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	288 290	Shaft	140	2, 640 5, 280	(b) 72	1
76	do	Jan. 1, 1889, to Dec. 31, 1889	300	Drift	*****	(a)	48	i
77	do	Jan. 1, 1889, to Dec. 31, 1889	(c)	Shaft	(d)	(a)	96	1
78	do	Jan. 1, 1889, to Dec. 31, 1889 Apr. 1, 1889, to Mar. 31, 1890	(e)	- 100	195	(g)	(y)	1
79 80	do	Apr. 1, 1889, to Mar. 31, 1890	294 114	Drift		6, 920 5, 280	(i) 42	1 3
81	do	Apr. 1, 1889, to Mar. 31, 1890 July 1, 1888, to June 30, 1889	90	Drift		7, 920	54	1
82	do	July 1, 1888, to June 30, 1889	100	Drift		3,000	48	1
83	do	July 1, 1888, to June 30, 1889	101	Drift		10, 560	54	1
84 85	do	July 1, 1888, to June 30, 1889	120	Drift		3, 640	48	1
86	do	July 1, 1888, to June 30, 1889 Oct. 1, 1888, to Sept. 30, 1889	161 200	Drift		1,900	48	None used
87	do	June 30, 1889, to Dec. 31, 1889	140	Slope		1,000	48	None used.
88	do	June 30, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jau. 1, 1889, to Dec. 31, 1889	48	Shaft	120	1, 390	53	11
89	do	Jan. 1, 1889, to Dec. 31, 1889	170	Drift		(a)	60	14
91	do	Jan. 1, 1889, to Dec. 31, 1889	202	Drift Shaft	50	2,500 1,500	60 54	None used
92	do	Jan. 1, 1889, to Dec. 31, 1889	225	Shaft	200	5, 280	72	- 1
93	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	230	Drift		4, 800	54	(5)
94 95	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	230 233	Slope		3, 640	60	None used.
96	do	Jan. 1, 1889, to Dec. 31, 1889	236	Shaft	69	2,000	48 52	None used.
97	do	Jan. 1, 1889. to Dec. 31, 1889	236	Drift		5, 280	(k)	None used.
98	do	Jan. 1, 1889, to Dec. 31, 1889	239	Slope		5,000	46	None used.
99	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	250	Drift Shaft	*****	600	42	None used.
100	do	Jan. 1, 1889, to Dec. 31, 1889	250 250	Shaft	70	2, 640 5, 000	50 60	None used.
102	do	Jan. 1, 1889, to Dec. 31, 1889	250	Drift		5, 280	50	14
103	do	Jan. 1, 1889, to Dec. 31, 1889	250	Drift		4,000	54	None used.
	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	252	Drift		60	(2)	None used.
105	do	Jan. 1, 1889, to Dec. 31, 1889	256 256	Drift		3, 500	(m) 60	11
	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	260	Drift		1,000	(71)	(f) 's
108	do	Jan. 1, 1889, to Dec. 31, 1889 Jan 1, 1889 to Dec. 31, 1889	262	Drift		(0)	54	None used.
	do	Jan. 1, 1889, to Dec. 31, 1889	270	Drift	100000	3, 500	66	None used.
	do	Jan. 1, 1889, to Dec. 31, 1889	288	Slope	200	(a) 3, 960	60 50	None used.
		Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	300	Shaft	200	7, 920	54	None used.
113	do	Jan. 1, 1889, to Dec. 31, 1889	300	Drift		3, 500	48	None used.
114	do	Jan. 1, 1889, to Dec. 31, 1889	300	Drift		2, 500 2, 640	48	None used.
	do	Jan. 1, 1889, to Dec. 31, 1889	300	Drift		2,640	54	None used.
	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	104	Drift		3, 375	72 72	(p)
118	do	Jan. 1, 1889, to Dec. 31, 1889	111	Drift		5, 280	72	11
119	do	Jan. 1, 1889, to Dec. 31, 1889	136	Drift	00000	4, 800	60	14
120	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	136	Drift Drift Drift		2,400	(k)	(i)
121	do	Jan. 1, 1889, to Dec. 31, 1889	173 180	Drift		(a)	48 54	(1)
	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	183	Drift		2, 640	58	(5) 11
124		Jan. 1, 1889, to Dec. 31, 1889	183	Dritt		(a)	108	11
125	do	Jan. 1, 1889, to Dec. 31, 1859	199	Drift		(a)	54	16
126	00	Jan. 1, 1889, to Dec. 31 1889	200	Drift		1, 300	48	None need.

a Not reported.
b From 24 to 36 inches.
c One mine 18, one 193, one 196, and one 207 days.
d One 20, two 60, and one 120 feet.
One mine 42, one 103, and one 132 days.
f One shaft and two drifts.
One mine 100, one 1,320, and one 2,610 feet.
A Two 42 inches each and one 78 inches.

i From 42 to 48 inches, j 14 and 3 inch. k From 54 to 60 inches. T From 54 to 66 inches. The From 54 to 96 inches. The From 54 to 96 inches. The From 40 to 6,000 feet. p 14 and 3 inch.

A .- PERIOD COVERED AND DESCRIPTION OF MINE-Concluded.

Es-		Period covered.				From	Thick-	
tab- lish- ment num- ber.	Locality.	Terminal dates.	Days of run- ning time.	Kind of mine.	Depth of shaft (feet).	face to work- ing point (feet).	ness of vein (inch- es).	Size of screen (inches).
127	United States.	Jan. 1, 1889, to Dec. 31, 1889	210	Drift		(a)*	60	11
128	do	Jan. 1, 1889, to Dec. 31, 1889	222	Drift		5, 280	54	11
129	do	Jan. 1, 1889, to Dec. 31, 1889	225	Drift		(a)	48	(b)
130	do	Jan. 1, 1889, to Dec. 31, 1889	230	Drift		10, 560	48	
131	do	Jan. 1, 1889, to Dec. 31, 1889	232	Drift		7,920	66	1
132	do	Jan. 1, 1889, to Dec. 31, 1889	244	Drift		3,850	48	18
133	do	Jan. 1, 1889, to Dec. 31, 1889	247	Drift		4,000	60	None used.
134	do	Jan. 1, 1889, to Dec. 31, 1889	203	Drift		3,500	(c)	(b)
135	do	Jan. 1, 1889, to Dec. 31, 1889	250	Drift		(a)	48	16
136	do	Nov. 1, 1889, to Dec. 31, 1889	30	Drift		1, 200	64	14
137	do	Dec. 1, 1889, to Mar. 31, 1890	102	Slope		1,500	48	None used.
138	do	Jan. 1, 1890, to Mar. 31, 1890	50	Drift		1,500	56	(b)
139	do	Jan. 1, 1889, to Dec. 31, 1889	200	Drift		1,800	(c)	(6)
140	do	Jan. 1, 1889, to Dec. 31, 1889	226	Drift		1, 320	30	None used.
141	do	Apr. 1, 1889, to Mar. 31, 1889	310	Drift		(a)	144	2
142	do	Jan. 1, 1889, to Dec. 31, 1889	150	Drift	*****	3, 960	72	18
143	do	Jan. 1, 1889, to Dec. 31, 1889	201	Drift		7, 260	66	11
144	do	Jan. 1, 1889, to Dec. 31, 1889	232	Slope	*****	1,000	168	None used.
145	do	Jan. 1, 1889, to Dec. 31, 1889	234	Drift		6, 600	66	None used.
147	Dominion of Canada.	Feb. 1, 1889, to Jan. 31, 1890 Jan. 1, 1889, to Dec. 31, 1889	276 214	Drift Slope		(a)	(a)	None used.
148	do	Jan. 1, 1889, to Dec. 31, 1889	255	Slope	45540	(a)	(a)	
149	do	Jan. 1, 1889, to Dec. 31, 1889	260	Slope		(a)	(a)	1
150	do	Jan. 1, 1889, to Dec. 31, 1889	263	Slope		(a)	(a)	1
151	do	Jan. 1, 1889, to Dec. 31, 1889	290	Slope		(a)	(a)	
152	Continent of Europe.	Jan. 1, 1889, to Dec. 31, 1889	301	Shaft	(d)	5, 338	30	(e) ·
153	do	Sept. 22, 1889, to Oct. 19,1889	24	Shaft	1, 112	(a)	(1)	None used.
154	do	Sept. 22, 1889, to Oct. 19, 1889	24	Shaft	1, 131	(a)	(1)	None used.
155	do	Sept. 22, 1889, to Oct. 19, 1889	24	Shaft	1,815	(a)	(n)	None used.
156	do	Jan. 16, 1890, to Apr. 15, 1890	75	Shaft	607	2, 553	24	(e)
157	do	Apr. 1, 1888, to Mar. 31, 1889	299	Shatt	(9)	(h)	(6)	(3)
158	do	Apr. 1, 1888, to Mar. 31, 1889	299	Shaft	984	(k)	(1)	(m)
159	do	Jan. 1, 1890, to Jan. 31, 1890	26	Shaft		(a)	(0)	None used.
	do	Oct. 1, 1889, to Dec. 31, 1889	75	Shaft		3, 937	(p)	None used.
161	Great Britain .	Sept. 30, 1889, to Dec. 28, 1889	72 73	Shaft	(9)	5, 280	(r)	1
163	do	Sept. 30, 1889, to Dec. 28, 1889	73	Shaft		4, 200	(a)	1
164	do	Sept. 30, 1889, to Dec. 28, 1889 Sept. 30, 1889, to Dec. 28, 1889	73	Shaft	492	6, 600	(t)	1
165	do	Jan. 1, 1889, to June 29, 1889	141	Shaft	(u) (w)	(0)	(8)	1
	do	Jan. 1, 1889, to Dec. 31, 1889	256	Shaft	(z)	(x) (a)	(y) (aa)	(66)
167	do	July 1, 1889, to Dec. 31, 1889	135	Shaft	1 056	5, 016	(cc)	(dd)
e 168	do	Aug. 1, 1889, to Jan. 31, 1890	139	Shaft	234	9, 240	48	Uf
e169	do	Aug. 1, 1889, to Jan. 31, 1890	146	Shaft	234	9, 240	48	(66)
e 170	do	Aug. 1, 1889, to Jan. 31, 1890	149	Shaft		10, 560	72	UD
171	do	Aug. 1, 1889, to Jan. 31, 1890	156	Shaft		10, 560	96	(99)
172	do	Mar. 1, 1890, to Mar. 31, 1890	24	Shaft		5, 940	96	(hh)
173	do	Jan. 1, 1889, to Dec. 31, 1889	292	Shaft	(11)	(iii	(kk)	, and
-7-	130.47 111.111.111	21			1444		4.00	

a Not reported.
b 14 and 2 inch.
c From 48 to 60 inches.
d Une 407, one 673, one 1,050, and one 1,778 feet.
e0.47 and 1.77 inch.
f From 20 to 79 inches.
g 623 and 771 feet.
h From 3.404 to 4,052 feet.
i Four veins: 79, 138, 157, and 236 inches, respectively. i Four voins: 79, 138, 157, and 236 inches, r tively.

j Six sizes: from 0.39 to 3.94 inches.

k 3,445 and 4,265 feet.

l 236 and 315 inches.

m Too varied to enumerate.

m Twelve shafts: from 984 to 1,591 feet.

o From 36 to 95 inches.

p Twenty-tive veins: from 28 to 87 inches.

q 450 and 600 feet.

r Four voins: from 26 to 66 inches.

s Three veins: from 33 to 66 inches.

.—COST OF PRODUCTION OF **BITUMINOUS COAL** AT VARIOUS MINES IN VARIOUS STATES—Continued. TABLE VIII .-

B .- THE MINER AND THE PRODUCT.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 166 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

Ea-			d by n		Bene- fit of	of						ined 2,000 ls).
lish- ment num- ber.	Smith-	Oil.	pow-	Other pur- poses.	miner per week from free fuel.	Description of coal.	Tons mined per miner per week.	Size of ton (pounds)	Pay of miner per ton.	Check- weigh- men em- ployed.	Total.	Per miner per week
1	\$0, 125	\$0, 300	\$1,650	80, 330	\$0.000	Run of mine .	30. 0	2,000	\$0.475	Yes	133, 043	30.
2	. 130		1.750			Run of mine .	40.0		. 450		41, 297	
3		. 375	2, 250	. 125		Run of mine .	26.3	2,000	(a)	Yes	502, 800	26.
4	. 200	. 400	. 550			Run of mine .	18.0	2,000	(b)	Yes	445, 223	18.
5	(c)	. 500	(d)			Run of mine .	28. 8	2,000	(1)	Yes	1, 108, 300	
6	. 125	. 200				Run of mine .	15.0	2,000	.700	No	4, 300	15.
7	.100	. 250			(g)	Lump	14. 6	2,000		Yes	110,782	14.1
8	.100	. 250			(g)	Lump	13.8			Yes	102, 774	
9	. 120				(9)	Lump	13. 2				147, 199	
10	(h)	(h)			(1)	Run of mine.	(h)	2,000		No	219, 704	
11	. 075					Lump	15. 0				126, 184	
12	(A) , 250	(A)	6 000		(9)	Run of mine.	(h)	2,000	(h)	No	60, 790	
13	.260	.300	2, 200		(g)	Lump	24.0		. 600		56, 764	
14	. 250	.250			(1)	Lump	24.0				87, 353 87, 608	
16	.300	. 250				Lump	24.0				51, 070	
17	. 250	. 300			(9)	Lump	24.0				39, 767	
18	. 180					Lump	18.0			Yes	39, 394	
19	.060				(0)	Lump	13. 8				30, 372	
20	.080	. 250			(g) (t)	Lump					39, 840	
21	. 110				(g)	Lump					10, 580	
22	. 120				(y)	Lump	13. 4			Yes	11,675	
23	. 100				(g)	Lump	13.9		. 825	Yes	11,070	
24	. 180		. 375		74. 125	Lump	16.0			Yes	41,286	
25	. 180				(i)	Lump	18.0				81, 260	
26	(A)	(A)			(6)	Run of mine .	(h)	2,000		No	37, 086	
27						Lump	n 48.0				96, 100	
28 29	o. 250 . 250	. 200	01.000			Lump	0 21.0				108, 451	
30	0.280					Lump	18.0				34, 878 100, 000	
31	n. 200				(i) (i)	Lump	n 60. 0				18, 560	
32	. 180	. 200				Lump	18.0		. 750	Yes	51, 690	
33	. 200	. 300	2, 150		(4)	Lump	20. 0		. 750	Yes	11, 068	
24	. 250	. 200	. 800		(p)	Lump	18.0		. 675	Yes	7,014	
35	. 287	.350				Run of mine .	28. 7	2, 240		No	358, 865	
36	. 280	.350			(1)	Run of mine .	28.0		9.500	No	80, 457	31.
37	. 293	. 350			(i)	Run of mine .	29.3		9.500	No	305, 925	32.
38	, 283	. 350				Run of mine .	28. 3		9.500	No	89, 792	
30	, 280	. 350		*****	(1)	Run of mine .	28.0		9.500	No	24, 800	
40	. 110	, 200	, 700			Lump	11.0		. 750		27, 950	
41	. 126	. 220				Lump	13.4		. 825		15, 355	
42	. 060	. 150	. 500			Lump	16.5				21, 093	
43	. 150	. 350	. 750			Lump	23. 0 18. 5		. 650	Yes	90, 521 21, 200	18.
45	. 180	. 210	1. 125		150	Lump	14.5		. 650	No	33, 652	
46	. 100	n. 220			#. 150	Lump	n 38. 0		n, 338		120, 500	
47	, 150	. 230		1.300		Lump	15.0				46, 177	15.
48	. 150	. 200				Lump	14.8		. 800		90, 791	14.
49	. 180	.000	. 650			Lump	18. 2				14, 644	
50	.100	. 140			4.400		12.0				32, 000	
51	.140	. 200	870			Lump	20. 3					

- s 47.5 cents in 72-luch seam and 67.5 in 36-inch seam.

 8 From 45 to 55 cents.

 6 From 18 to 25 cents.

 6 From 81.25 to 82.

 9 Miners' families pick up coal for use.

 7 From 45 to 47.5 cents.

 9 Pays \$1.50 per ton at dump.

 A No hand miners employed.

 6 Pays \$1.50 per ton at dump.

 7 Pays \$1.50 per ton delivered at his house.

 8 Pays \$1.60 per ton at dump.

- l Pays \$1.35 per ton at dump. m One-half ton of slack coal. n Loaders (machine mine).
- o Relates to hand mining only; mostly machine work.

 Prays \$1 per ton at dump.

 When cutting headings miner gets 60 cents per
- ton.
- r Pays \$1.30 per ton at dump.
 d One-fourth ton.
 f For checkweighman.

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TABLE VIII.—COST OF PRODUCTION OF BITUMINOUS COAL AT VARIOUS MINES IN VARIOUS STATES—Continued.

B. -THE MINER AND THE PRODUCT-Continued.

[Establishments numbers 1 to 148 are in the United States; numbers 147 to 151 are in the Dominion of Ganada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 178 are in Great Britain.]

				Bene- fit of miner	it of siner						Coal mined (tons of 2,000 pounds).		
Smith- ing.	Oil.	Gun- pow- der.	Other pur- poses.	per week from free fuel.	Description of coal.	Tons mined per miner per week.	Size of ton (pounds)	Pay of miner per ton.	Check weigh- men em- ployed.	Total.	Per mine per week		
					Lump	(a)	2, 000	(a)	No	6, 200	(a)		
	230	1 270					2,000	90. 850	Ves.	70 555	15.		
. 150	. 100	. 500			Lump	21.0	2,000	. 650	NO	30, 000	21		
.170	210	(c)	(d)		Lump		2,000	. 650	Yes	34, 221	18		
172	220	7. 120	(d)		Lump	17. 2	2,000		Yes.	96, 500	19		
. 150	. 450	1. 200			Lump		2,000	. 860	Yes	17, 500	14		
.120	. 050	1, 220			Lump	12.0	2,000	. 800	Yes	44, 424	12		
.200	100	. 950		7 100	Lump	18.3	2,000	. 630	No	25, 500	18.		
.188	. 250	. 750		2.100	Lump	22.0	2,000	. 650	No	47, 372	22		
, 210	.180	. 600			Lump	19.0	2,000	. 650	Yes	70, 950	19		
.210	.180				Lump	14.0	2,000	. 650	Yes.	71, 190	14		
(a)	(a)	(a)			Lump	(a)	2,000		Yes	103, 659	15 (a)		
. 125	150	500			Lump	20.0		. 650	Yes	37, 032	20		
. 150	. 300	. 250		(g)	Lump	17.0	2,000	650	No	50, 020	17.		
. 250	. 200	1, 150			Lump	16.0		. 650	No	42, 398	16		
. 210	.400	. 560		h. 137	Lump	12.0	2,000	. 803	No	21, 169	12		
.110	.130	. 490			Lamp	19.0		750	No		13		
f. 190			1.000		Lump	123.0	2,000	1.650					
. 180	,200	. 500		. 500	Run of mine .	22.5	2,000	, 500	Yes	36,000	22		
	. 200				Lump		2,000		Yes	429, 385	20.		
. 125	. 100	, 650	. 100	. 120	Lump	14.7	2,000	. 675	No	26, 640	114		
. 180	. 190	.870			Lump	19.3	2,000		Yes	27, 283	19.		
.150	150	350			Lump		2,000	790	Yes	58, 094	20.		
. 150	. 150	. 350			Lump	21.0	2,000	.790	Yes	65, 123	21		
. 210	(1)	. 400			Lump	19.0			Yes	78, 402	19		
210	300	9 000			Run of mine				Yes	98, 846	18. 28.		
. 250	. 400	. 560		. 250	Run of mine.	20. 0	2, 240	. 500	Yes	6, 733	22		
. 250	. 220	. 250			Lump	16. 8	2,000		Yes	12, 232	16		
125	150	. 400			Rur of mine		2,000		Yes	50 867	18 26		
. 140	. 270	.130			Lump	14.0			Yes	23, 574	14		
.150	(c)				Run of mine.	20.0			Yes	192, 294	20		
150	200				Run of mine		2,000	. 500	Yes.	80 983	12		
, 125	. 150	(c)			Run of mine.	19.0	2, 240	(m)	Yes	68, 234	21.		
. 173	. 150	. 100			Lamp	18.0	2,000	(21)	Yes	69, 312	18		
. 150					Run of mine.	17.0	2, 240	.500	Yes	89, 327	22 19		
100	(c)	(c)			Run of mine.	18.0	2, 240	.500	Yes.	53, 984	20		
. 125				(p)	Run of mine.	24. 0	2,000	, 450	Yes	39, 720	24.		
	Smith- ing. \$0.100 .160 .150 .170 .120 .200 .200 .100 .125 .210 .150 .150 .1150 .125 .210 .130 (d) .125 .130 .13	Smith- ing. Oil. \$0.100 \$0.150 .160 .230 .150 .160 .150 .100 .170 .210 .150 .200 .200 .240 .120 .080 .210 .188 .210 .188 .210 .180 .210 .180 .250 .200 .210 .180 .250 .200 .200 .200	per week for- Smith- ing. 0il. Gun- pow- der. \$0.100 \$0.150 \$0.750 160 230 1.270 150 100 500 170 210 (c) 190 190 850 120 250 1.220 240 950 120 240 950 120 150 450 1.200 210 180 300 210 180 300 210 180 300 210 180 300 210 180 500 150 150 988 (a) (a) (a) (a) 125 150 500 170 130 490 170 180 500 130 250 600 130 200 500 130 200 500 130 200 500 130 200 500 130 150 150 350 150 150 150 350 15	SO 100 \$0 150 \$0 750 \$0 000 160 230 1 270 150 100 500 170 210 (e) (d) 190 190 870 e 110 172 220 1 120 (e) 150 450 1 200 e 500 120 050 1 220 120 050 1 220 120 050 1 220 120 180 200 188 250 750 210 180 300 125 150 500 150 300 250 (e) 140 510 250 200 1 50 110 130 490 170 180 580 190 150 550 110 130 490 170 180 580 190 150 550 110 150 550 150 150 550 150 150 550 150 150 550 150 150 550 150 150 550 150 150 550 150 150 550 150 150 350 150 150 350 150 150 350 150 150 350 150 150 350 150 150 350 150 150 350 150 150 350 150 150 350 150 250 200 250 200 250 250 220 250 380 350 400 125 150 500 140 270 130 150 200 300 155 150 (e) 173 150 100 150 200 300 150 (c) 173 150 (e) 173 150 100 150 200 300	Smith Oil Gun Other from week for	Smith- Oil. Gun- Other free week for purder. poses. free Smith Oil. Gun Other from pow pur free der. poses. fuel. Description mined per week.	Smith Oil. Gun Other free der. Description Oil. O	Smith Oil. Gun Other pow der. Description of coal. Description Oil. Size of per week. Oil. Other free fuel. Description Office per week. Oil. Oil	Smith ing. Oil. Gun Other free per week Smith ing. Oil. Gun Other free per week Smith ing. Oil. Other free powers Other free per week Size of per winer per week Other free per week Other fre	Smith- Oil. Oil. Down Other from port Per port Oil. Down Other from poses Fael. Description Officeal. Description Description Officeal. Description De			

B .- THE MINER AND THE PRODUCT-Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Deminion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

Es-	Amou	nt pai er wee			Bene- fit of miner	of						ined 2,000 is).
lish- ment num- ber.	Smith- ing.	Oil.	Gun- pow- der.	Other pur- poses.	per week	Description of coal.	Tons mined per miner per week.	Size of ton (pounds)	Pay of miner per ton.	Check weigh- men em- ployed.	Total.	Per miner per week
101	\$0,150	\$0.310	\$0. 100	\$0,000	a\$0.030	Lump	12. 0	2,000	\$0.735	Yes	75, 000	12.0
102	. 140	. 250	.100		******	Lump	15.0	2,000	730	Yes	66, 909	15. (
103	. 250	. 400	. 560		. 250	Run of mine.	23. 0		. 500	No	61, 014	25. 8
104	.100	. 150	. 500		.111	Run of mine.	20.0		. 500	Yes	58, 340	22.
105	.125	. 180	. 530			Run of mine.	30.9		. 446	Yes	316, 437	30.
106	. 125	. 180	. 530			Run of mine.	23. 8			Yes	229, 510	23.1
107	. 185	. 350	, 200 (c)			Run of mine.	14.6 22.2		(b) . 500	Yes	43, 500 185, 743	25.
109	.125	.150	(0)	*****		Run of mine.	20.0		. 428	Yes	253, 173	20.
110	.125	.150	(c)		. 333	Run of mine.	19.0		.483	Yes	193, 869	21.
111	. 125	. 300	2.000			Run of mine.	24.0		. 450	Yes	60, 280	
112	.170	.100	. 250			Run of mine.	23.0	2, 240		Yes	102, 767	25.
113	. 150	. 200	. 360		. 250	Run of mine.	16.0		. 504	Yes	37, 601	17.5
114	.200	. 300	. 500		. 250	Run of mine.	26.0	2, 240	. 500	Yes	31, 029	29.
115	. 150	.150	. 220		******	Run of mine.	24.0		, 500	Yes	38, 152	
116	.180	(0)	(0)		******	Lump	19.0		. 790	Yes	28, 657	19.
117	.180 .160	.170	. 250			Lump	11.9		.790 .790	Yes	40, 513 31, 056	11.
119	190	. 180	. 100			Lump	15.0			Yes	40, 823	
120	(c)	(c)	(c)			Lump	13.0			Yes	28, 047	
121	. 253	. 250	.150			Lump	16, 0		. 730		34, 708	
122	.100	. 220	. 200			Lump	12.0		. 790	Yes	44, 854	
123	.170	. 200	(c)			Lump	13. 2		. 730		14, 231	
124	.150	. 250	- 200			Lump	18.0		. 530	Yes	33, 338	
125	.175	. 350	.250			Lump	15. 0 21. 0			Yes Yes	117, 245	
126	.200	.130	. 250	e. 050		Run of mine.	16.0		. 450	Yes	9, 968 57, 100	
128	110	(0)	. 200	9.240	******	Lump	14.0			Yes	128, 990	
129	250	. 250	. 150			Lump	16.0			Yes	24, 827	
130	.100	. 300				Lump	11. 2		. 730		25, 671	11.
131	. 250	. 300				Lump	(h)	2,000	.700		62, 450	(h)
132	. 180	. 250	- 150			Lump	11.8	2,000	. 730		59, 020	11.
133	.150	. 400	(c)	e. 050	******	Run of mine.	24.0	2,000	. 450		59, 592	
134	.100	. 300	, 200				(c)	2,000		Yes	98, 280	
135	. 200	. 200	. 220		(d)	Lump	12.7		. 730	Yes	15, 810	12,
136	. 125	.150	.500			Run of mine.	24.0		. 500	Yes	5, 535 26, 288	
138	. 200	. 250	. 250			Lump	11.3		.730	Yes	8, 143	
139	. 150	.300	.150			Lump	15.0		(6)	Yes	72, 370	
140	. 250					Ruu of mine.	18.0		.700	No	64, 454	
141	. 250	. 125	(c)	. 050	. 250	Kun of mine.	36.0	2, 240	.375	No	763, 028	
142	. 200	.140	- 720			Run of mine.	24.0	2,000	. 500	Yes	35, 500	
143	(j)	. 300	. 400		******	Run of mine.	26. 7	2,000	, 500	No	5, 355	
144	.300	.350	050	*****	(k)	Run of mine.	30.0		. 500	No	393, 781	33.
145	(5)	. 210	.850	*****	******	Run of mine.	21.3		.500	No	30, 720	
147	- (j)	. 100	. 910		(1)	Run of mine. Run of mine	18.0 21.9		. 533	No	14, 338	
148	3		. 210		(1)	Ran of mine	29.0		. 450	No	(c)	32.
149		. 575	. 225	,310	(m)	Run of mine.	27.4		. 523	No	(0)	30.
150					(24)	Run of mine.	25. 0	2, 240	465	No	(c)	28.
151		. 180	1,020	- 070		Run of mine.	20.0		. 666		(c)	22
152						Run of mine.		2, 205	. 164	Yes		

s Allowed adiscount of 20 cents per ton from sale

prices.
b Miners' rates vary.

o Miners rates vary.

e Not reported.

d Allowed all the coal he needs free.

e Cotton squiba.

f From 30 to 35 cents.

g For checkweighman.

A From 20 to 25 tons.

i Relates to hand mining only; mostly machine i Relates to hand mining only; mostly machine work.

j Miners do their own smithing.

k Pays \$1.25 per ton as dump.

l Allowed coal at half price, or \$1.60 per ton.

m Allowed coal at \$1.18 per ton.

n Allowed coal at half price, or \$1.20 per ton.

o From 9.6 to 38.6 cents.

p Also house rantreduced about 33 cents per week.

.—COST OF PRODUCTION OF **BITUMINOUS COAL** AT VARIOUS MINES IN VARIOUS STATES—Continued. TABLE VIII.-

B .- THE MINER AND THE PRODUCT-Concluded.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

Es-		Amount paid by miner per week for—			Bene- fit of miner	Actua	Actual conditions of mining.					
lish- ment num- ber.	Smith- ing.	Oil.	Gun- pow- der.	Other pur- poses.	per week from free fuel.	Description of coal.	Tons mined per miner per week.	Size of ton (pounds)	Pay of miner per ton.	Check weigh- men em- ployed.	Total.	Per miner per week.
153					(a)	Run of mine.	32.0	2, 205	(b)	No	6, 698	35.3
154	1100000			27720	(a)	Run of mine.				No	4, 663	
155					(a)	Run of mine.			(6)	No	16, 832	
156	(c)		(d)		\$0, 100	Run of mine.						
157		\$0, 162		\$0, 165		Run of mine.					683, 046	
158		. 162	. 728	. 165	. 054	Run of mine.						43.6
159		. 107	. 286		(e)	Ran of mine.	15. 0			No		
160			. 214		(1)	Run of mine.	16.2	2, 205	. 774	No	98, 086	17.9
161						Run of mine.	18.0	2, 240	(9)	Yes.	43, 727	20. 2
162						Ran of mine.	18.0	2, 240	(2) (h)	Yes	71, 875	
163						Run of mine.	18.0	2, 240	(i)	Yes	30, 769	
164						Run of mine.	18.0	2, 240	(j)	Yes	60, 903	20. 2
165			(k)			Run of mine.			(1)	Yes	456, 124	19. 6
166			. 426		. 527	Run of mine.	14.8	2, 240	.543	Yes	837, 850	16.5
167					. 243	Run of mine.	12.9	2, 240	(m)	Yes	148, 878	14.4
168			. 487		. 527	Run of mine.	15.0		. 584		49, 427	
169			. 487		. 243	Run of mine.	21. 0		(n)	Yes	78, 984	23. 5
170			. 527		. 527	Run of mine.	(0)	2, 210	. 517		149, 806	(p)
171		. 122			. 514	Run of mine.		2, 240	(q)	Yes	168, 209	43.7
172					. 518	Run of mine.	15. 0		. 465		37, 587	
173	\$0.061	. 122	(r)	. 061		Run of mine.	11.5	2, 240	(t)	Yes	1, 108, 495	12.9

a 50 per cent. reduction from market price.
b Paid by the square metre of surface mined.
a Miners do their own smithing.
d From 10 to 40 cents.
e Allowed coal at coat price.
f Allowed coal at \$1.43 per ton.
g From 36.8 to 41.6 cents.
h From 33.4 to 48.8 cents.
i From 30.7 to 48.6 cents.
f From 36.7 to 44.6 cents.
f From 24.3 to 48.6 cents.

l From 22.4 to 38.5 cents.

m 38.1 and 49.1 cents.
n 45.2 and 49.1 cents.
e From 18 to 25 tons.
p From 20.1 to 28 tons.
q 12.2, 16.4, and 36.2 cents, according to quality
of coal.
r Not reported.
s Accident relief society.
t From 45.6 to 61.8 cents for large coal, and from
29.5 to 55.8 cents for small coal.

C.-CHEMICAL ANALYSIS OF COAL (PER CENT.)

Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada, numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Errors.]

Zetablishment number.	Water.	Volatile combustible matter.	Fixed carbon.	Salphur.	Ash
	1. 508	30, 480	61, 600	.470	5.94
	(a)	(a)	(a)	(a)	(a)
	2. 240	34, 120	60, 750	. 480	2, 41
	, 990	30, 750	58, 050	(b)	10, 21
	1.020	31. 850	63. 820	Trace.	3, 31
	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)
	(a) 8,280	(a) 36, 280	(a) 49, 060	(a) 1.840	4.54
	5, 100	32, 290	53, 870	(c)	8, 74
	(4)	(a)	(a)	(a)	(a)
	(4)	(a)	(a)	(a)	(a)
	(4)	(a)	(a)	(a)	(4)
	(4)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)
E	5. 000	41. 420	37, 880	***********	15, 70
	· (a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(4)	(a)
	9, 320	30, 819	50, 490	3. 220 1. 840	6.10
	8, 280	36. 280	49, 060	(4)	4.54
	(a) (a)	(a) (a)	(a) (a)	(a)	(a) (a)
	(4)	(a)	(4)	(4)	(a)
	7. 180	40, 680	46, 860	1. 280	4, 00
	.400	24. 800	70, 500	1.800	2, 50
	. 400	24, 800	70.500	1.800	2, 50
	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(4)
	(a)	(a)	(a)	(a)	(4)
	(a)	(a)	(4)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(4)	(a)
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(a)	(a)	(a)	(a) (a)	(a)
	(a)	d 20, 750	(a) 79, 250	(44)	(a)
		15, 760	81, 600		2.61
	(a)	(a)	(a)	(a)	(4)
8	(a)	(a)	(a)	(a)	(a)
6	. 480	17, 980	72,610	.800	8, 13
		42.130	56, 290	(e)	1.58
	(a)	(a)	(a)	(a)	(a)
	4, 200	39, 320	52, 580	(n)	f 3, 90
	(a)	(a)	(a)	(a)	(a)
6	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(6)	(a) (a)
	(4)	(4)	56, 320	790 (4, 93
	3. 970	\$3,990	(4)	(a)	(a)
£	(a)	(a) (a)	(4)	(a)	(4)
	(a)	(a)	(4)	(4)	(4)
	6, 450	32 740	58, 560		2 25
	6, 780	31, 540	50, 320	(4)	2,36
	(4)	(a)	(a)	(4)	(a)
	(6)	37, 380	59, 460	(4)	3, 16
	(4)	(a)	(a)	(4)	(a)
	(a)	(a)	(a)	(a)	(a)
	(a)	(4)	(a)	(4)	(4)
anneed the commencer	2, 700	36, 300	59, 200	Trace.	1.80
	(a)	(4)	(0)	(4)	4.93
	5. 820	39, 130	49, 470 56, 320	(1)	4, 93
	3. 970	38, 960	59, 020	(2)	2.02
	3, 850	34, 650	58, 600	(2)	2, 90
	6, 610	36. 410	54. 170		2.83
4	(e)	(6)	(6)	(6)	(6)
	5, 380	36. 530	49, 770	1.600	(0

p for anyoned philopout op mynrode determ:nation 2.230. Alejopout op mynrode determination, 2.310. I Morecom

A Salphur, by sparate determination 6.730.

i Water, by separate determination 6.250.

j Salphur, by separate determination 6.750.

k Salphur, by separate determination, 6.250.

l Salphur, by separate determination, 6.250.

bulying up anywers tream action, 0.875. Ask act aliquid spay set. Excipted up anywests tetermication, 1.190.

C .- CHEMICAL ANALYSIS OF COAL (PER CENT.)-Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 166 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

Establishment number.	Water.	Volatile combustible matter.	Fixed carbon.	Sulphur.	Ash
67	(4)	(a)	(a)	(a)	(a)
68	4. 070	41.130	49, 500	(6)	(a) 5 5, 300
60	(a)	(a)	(a)	(a)	(a) 7. 150
70	4. 200	37. 010	51, 640	(c)	7. 150
71	4. 650	42. 450	47, 050	(d)	4. 95
72	(a)	(a)	(a)	(a)	(a)
73	4, 820	40.680	49.780	(e)	4. 720
74	(a)	(a)	(a)	(a)	(a)
75	5. 980	36. 480	52, 410	S	5. 130
76	(a)	(a)	(a)	(a)	(a) 2.03 (a)
77	5, 600	29. 130	62.450	. 790	2, 03
78	(a)	(a)	(a)	(a)	
79	(a)	(a)	(a)	(a)	(a)
80	6. 950	39, 800	52 000	(g)	1. 25
81	.410	29. 160	67. 060	.970	2.400
82	- 410	29, 160	67, 060	. 970	2, 400
83	(a)	(a)	(a)	(a)	(a)
84	(a)	(a)	(a)	(a)	(a)
85	(a)	(a)	(4)	(a)	(a)
86	. 740	23, 900	69. 087	1.373	4. 90
87	(a)	(a)	(a)	(a)	(a)
88	(a)	(a)	(a)	(a)	(a)
89	(a)	(a)	(a)	(a)	(a)
90	. 800	23. 260	72. 350	. 590	3, 000
01	(a)	(a)	(a)	(a)	(a)
93	(a)	(a)	(a)	(a)	(a)
93	(a)	(a)	(a)	(a)	(a)
94	(a)	(a)	(a)	(a)	(a)
95	780	20. 640	74. 823	. 507	3, 25
96	1.000	28, 000	66, 000	1.000	4.000
97	(a)	(a)	(a)	(a)	(a)
98	. 836	21. 537	74.042	. 635	2. 950
99	. 550	18.540	77. 190	(h)	3. 720
00	**********	18. 300	78. 600	. 400	2. 700
01	(a)	(a)	(a)	(a)	(a)
02	(a)	(a)	(a)	(a)	(a)
04	(a) . 855	(a) 21, 944	(a)	(a) (i)	(a)
05		30. 827	73. 365 63. 226	. 580	3, 83
06	. 610	30. 821	63, 226	.785	4. 75
	. 754				4. 550
08	(a) . 825	(a) 21, 235	(a)	(a)	(a)
09			74. 182	. 618	3. 14
10	(a)	(a)	(a)	(a) (a)	(a)
11	(a)	(a) 18.300	78. 600	. 400	(a) 2,700
12	(4)			(a)	
13	(a)	(a)	(a)		(a)
14	(a)	(a)	(a)	(a)	(a)
15	(a) (a)	(a) (a)	(a)	(a)	(a)
16	(4)	(a)	(a)	(4)	(a)
17	(4)	(a)	(a)	(a)	(4)
18	(a)	(a)	(a)	(a)	(a)
10	(a)	(a)	(a)	(a)	(4)
20	(a)	(a)	(a)	(a)	(a)
21	(a)	(a)		(a)	(a)
22	, 620	33. 640	58, 470	1. 020	6, 25
93	(a)	(a)	(4)	(a)	(a)
4	. 720	j 34. 070	61. 340	k. 720	3, 15
25	. 120	21, 995	73. 046	1.144	3. 81.
26	(a)	(a)	(4)	(a)	(a)
27	(a)	(a)	(a)	(a)	(a)
28	, 620	33, 640	58, 470	1, 020	6. 25
29	(a)	(a)	(4)	(a)	(a)
30	(4)	(a)	4)	(a)	(a)
31	, 860	35, 180	58, 830	, 980	4. 15
VA	1 500	27.745	DOI: 000	1. 639	7. 22

a Not reported.

b Ash and sulphur combined.
c Sulphur, by separate determination, 3.090.
d Sulphur, by separate determination, 3.890.
c Sulphur, by separate determination, 2.040.
f Sulphur, by separate determination, 1.090.

C.-CHEMICAL ANALYSIS OF COAL (PER CENT.)-Concluded.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 153 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

Establishment number. W	ater.	Volatile combustible matter	Fixed carbon.	Sulphur.	Ash.
33	1, 033	21, 600	71, 752	(a)	5, 615
34	(b)	(b)	(b)	(b)	(b)
35	(b)	(b)	(b)	(6)	(6)
36	.510	36, 320	53, 990	630	8,550
37		20,000	75, 160	.480	4, 360
38	(6)	(b)	(b)	(6)	(6)
30	(b)	(6)	(6)	(b)	(4)
40	1, 300	21.100	74, 200	700	2,700
¶	. 655	20, 340	74, 765	.735	3, 505
43	1.010	45, 170	44, 300	1, 230	8, 290
3	(b)	(6)	(6)	(b)	(6)
4	. 760	19, 390	72, 990	(c)	6, 860
45	1. 200	43. 200	46, 300	(d)	9, 210
46	(b)	(6)	(b)		
47	(b)	(6)		(b)	(6)
	(6)		(6)	(6)	(b)
48		(b)	(b)	(6)	(6)
49	(b) 1, 200	(6)	(a)	(b)	(b)
50		23.050	69. 000	. 290	6. 400
51	1.115	32. 582	60. 013	(e)	6, 290
52	******	15, 450	70, 95	Trace.	13, 600
53		19. 000	62 : 1	L 250	17, 500
54		19, 000	62. 2.00	1. 250	17, 560
55		19.000	62, 250	1. 250	17, 500
56	*******	13.920	75. 430	Trace.	10, 630
57	(b)	(6)	(b)	(6)	(b)
58	(b)	(b)	(b)	(6)	(6)
59	(6)	(6)	(b)	(b)	(b)
60	7,000	(b)	(b)	. 500	6,500
61		7. 700	89. 780	1.020	1.500
62		7, 700	89, 780	1.020	1,500
63		7,700	89. 780	1,020	1,500
64		7, 700	89. 780	1.020	1, 500
65		15, 300	62, 760	. 940	21,000
06	4, 030	15, 880	75, 650	1,940	2, 500
67	, 950	36, 280	58, 870	(n)	3.900
68	(b)	(b)	(b)	(6)	(b)
	(6)	(b)	(6)	(6)	(b)
70		38, 600	58, 400	197	3, 000
71		13, 110	84, 420	. 620	1. 850
72	(b)	(6)	(b)	(b)	(b)
73	(6)	(4)	(b)	(6)	(6)
10	101	(a)	(0)	(0)	(0)

Sulphur, by separate determination, 0.815.
 Not reported.
 Sulphur, by separate determination, 0.880.

d Sulphur, by separate determination, 3, 480, c Sulphur, by separate determination, 1, 250, f Sulphur, by separate determination, 0,940.

D.—GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishme: ts numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 166 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included, but royalty to the state, when paid, is included under taxes.]

ab-		Officials	Supplies ar	d repairs.	De Compt of the		Value of	100
er um- er.	Labor.	and clerks.	Timber.	Other.	Taxes.	Gross total.	screenings.	Net total.
1	\$127, 046	\$4, 337	\$320	\$12, 193 3, 200	\$250	\$144, 146		\$144, 14
2	24, 000	900	191	3, 200	780	29, 071		29, 07
3	414, 690	27, 961	30, 781	42, 526	1, 364	517, 322		517, 32
5	350, 786 874, 640	9, 437 12, 000	3, 100 7, 000	13, 106 73, 800	530 3, 500	376, 959 970, 940		376, 95 970, 94
6	4, 275	12,000	100	100	3, 500	4, 475		4, 47
7	138, 489 128, 960	4, 500	4, 875	8, 723	2, 220	158, 807	\$18,000	140, 80
8	128, 960	5, 564	4,078	7, 450	3, 234	149, 286	\$18,000 17,000	132, 28
9	164, 598	5, 324	5, 888	7, 242	800	183, 852	19, 600	164, 25
10	112, 552 126, 352	2, 400 4, 800	4, 860 3, 000	5, 493 3, 650	2, 200 500	127, 505 138, 302	22, 050	127, 50 116, 25
12	33, 019	1, 500	1, 367	2, 253	1, 250	39, 389	22,000	39, 38
13	47, 376	3,600	1,082	1,895	287	54, 240	7,560	46, 68
14	68, 886	2,542	875	2, 184	388	54, 240 74, 875	7,560 13,960 12,000	60, 91
15	73, 953	2, 700	2, 409	3, 773	550	83, 385	12,000	71, 38
16	41, 151	3, 480 1, 350	1, 022	1,788	283 250	47, 724 36, 202	6, 800 5, 280	40, 92 30, 92
18	33, 065 39, 324	2, 360	985	2, 360	187	45, 216	6, 550	38, 66
19	34,937	348	1, 822	1, 974	250	39, 331	4,000	35, 33
20	42,923 11,711	240	2, 672	2, 429	234	48, 498	5, 280	43, 21
21	11,711	406	410	701	185	13, 413	1,750	11, 66
22	13,018 12,113	444 480	467 582	724 589	67 270	14, 720 14, 043	1, 400 1, 800	13, 32 12, 24
24	43,531	548	1, 690	2, 410	234	48, 413	6, 850	41, 56
22 23 24 25 26	76, 132	2,080	1, 706	2,600	150	82, 668	12, 960	69, 70
26	21, 882 64, 319	3, 000	668	1, 298	250	27, 098		27, 09
27 28	64, 319	3, 600 3, 260	1, 705	3, 793	1, 761	75, 178	9, 625	65, 55
28	89, 127 32, 710	3, 260 2, 340	3, 339 1, 171	7,569 1,128	2, 000 350	105, 295 37, 699	17, 320 4, 800	87, 97 32, 89
30	84, 999	3,000	2,000	3, 500	500	93, 999	16,000	77, 99
31	14,780	1, 140	360	1,009	95	17, 384	1, 750	15, 63
32	48, 139 10, 346	3,500	1, 034	2, 584	201	55, 458	8, 240 1, 760	47, 21,
33	6,542	500 780	222 334	225 119	60. 35	11, 353 8, 210	840	9, 59 7, 37
35	193, 789	3, 200	7, 564	7, 276	6, 926	218, 755	000	218, 75
35 36	48, 241	4, 610	3, 180	2, 654	735	59, 420		59, 42
37	160,624	3, 200	6, 500	8, 610	3, 763	182, 697		182, 60
38	50,077	1,212	1,411	4, 558 844	1, 667 213	58, 925 15, 104		58, 92 15, 10
10	13, 121 33, 760	3, 324	1, 152	4, 606	34	42, 876	5, 924	36, 95
41	16, 321	2,400	411	1, 071	65	20, 268	5, 288	14, 98
41	16, 198	833	800	8, 085	48	25, 964	6, 706	19, 25
43	68, 269	900	1,000	1,877	136	72, 182 19, 577	4, 955 2, 478	67, 23
44	16, 536 50, 061	2, 100 1, 240	204 707	1, 405	252	19, 577 53, 665	2, 478 10, 800	17, 09 42, 86
46	95, 316	4, 950	1, 083	9, 038	120	110, 516	15, 665	94, 85
46	41, 119	2, 160	1,600	1, 575	367	46, 821	4, 909	41, 91
48	105, 682	6,000	6, 358	8, 883	76	126, 999	13, 128	113, 87
49 50	15, 015 34, 585	200	255 298	2, 165	110 25	16, 855 37, 213	3, 477 4, 968	13, 37 32, 24
51	28, 087	735	336	2, 065	34	31, 257	2, 200	29, 05
52	5, 798	550	580	1, 330	31	8, 289	420	7, 86
53	39, 798	2, 900	1,729	1, 324	29	45, 780	8, 000	37, 78
54	88, 851	5, 096	3, 528	7, 056	70	104, 601	13,520	91, 08
55	24, 087 30, 020	2, 500 1, 500	300 901	1, 692	65	27, 387 34, 238	3, 373 4, 000	24, 01 30, 23
57	55, 970	4, 500	645	1,698	27	62, 840	10,000	52, 84
58	106, 165	6, 620	2, 111	1,734	108	116, 738	8, 890	107, 84
59	18,550	2, 625	525	875	38	22, 613	4, 650	17, 96
60	48, 461	2, 958 1, 865	1, 304	5, 216 3, 052	321	57, 939 25, 319	9, 307 5, 565	48, 63 19, 75
62	19, 160 19, 119	2, 640	502	1,716	145	24, 122	5, 100	19, 02
63	46,827	1, 200	722	3, 907	178	52, 834	7, 286	. 45, 54
64	46,827 54,238	5, 400	1, 140	4, 345	430	65, 553	10, 125	55, 42
65	69, 154	3, 000	1, 199	2, 347	75	75, 775	18, 548	57, 22
66	40,677 72,835	1,500	1, 361	1, 832	31	45, 404 78, 349	8, 253 11, 000	37, 13 67, 34
68	40, 307	2,000	1, 915	2, 240 7, 550	74	50, 755	11,727	39, 02
69	48, 470	1, 800	1, 199	3, 498	61	55, 028	12,000	43, 02
70	20, 295	800	343	1, 193	99	22, 730	9, 650	13, 08

TABLETS MINES IN VARIOUS STATES—Continued.

D. STATEMENT OF COST FOR THE PERIOD-Continued.

I to lettere in the United States; numbers 147 to 151 are in the Dominion in the Dominion in the property of Europe; and numbers 161 to 173 are in Great hands and the experts of value of plant, charges for freight of product to place of the soil are not included, but royalty to the state, when

20			Supplies an	d repairs.	18.3		Wales of	
resta resta resta	Lione	and press.	Timber.	Other.	Taxes.	Gross total.	Value of screenings.	Net total
*	NS 50	\$2, \$3V	\$1, 034	\$624	\$552	\$14, 890	\$15, 811	\$29, 07
911		7 30	797	3, 239 700	345	34, 773 16, 428	3, 920 4, 890	30, 85 11, 53
	1 .	430	473	1,003	33	26, 150	2,610	23, 51
	24 40	1.34	4,646	10,000	350	268, 496	22, 750	245, 74
7	29 366	4	600	2,900	46	30, 806	48,677	30, 80
. 2	P11	h had	¥ 111	2 085	7, 570	418, 634 29, 244		25, 03
	1, -3	0	7.29	1, 181	645	26, 720	4, 191 3, 276	23, 44
4	20 May	304	452	656.5	20	24, 994	1, 800	23, 15
	3.67	1001	4.433	5, 678		75, 029	6, 253	68, 77
4	· ·· · · · · · · · · · · · · · · · · ·	SAM	4 433	5, 678	1, 255	90, 069 71, 614	7, 970 7, 157	82, 05 64, 45
v	4. 4.2	9.4	1, 349	5, 736	350	92, 436	6, 787	85, 6
*	40. 40	- W	Vo. 1	2,473		111, 040	8, 605	102, 43
7 4	12. 100	7. 406	2.50	2, 200	5, 579	193, 232		193, 23
	4.45	186	246	541	15 75	14, 494	1,060	13, 0
4	2 104	-00	175	365 184		20, 976	1,645	19, 3
4	121	2.40	- 496	2 250	400	34, 482		34, 48
W	14 of	- 40	337	1, 396	100	25, 414	2, 800	22, 6
	74 764	210	7, 750	8, 785	542	170, 405		170, 40
;	7 70	5, 1697	1, 343	2 486	319 534	45, 103 55, 578	5, 200	39, 9 55, 5
4	AV 16.	. ~~	2 920	198	426	49, 348		49, 3
2.1	. 7 .00	1.50	2.324	3, 284	2,001	81, 850	6, 007	75, 8
4	7 11		4	4 8 100	1, 288	117, 084		117, 0
	3	1974	1, 1,56	4. 369	538	64, 070 36, 428		64, 07 36, 42
	NY 1991	, 100	24	2, 200	263	31, 481		31, 4
2.0	3.7.3	1 00	7.4	4. 591	333	77, 405	13, 000	64, 40
200	91		- JEW	1, 100	600	64, 890	5, 235	59, 63
3	2 0	W	230	300		38, 913		28, 9
	2 20	44	879	a 8, 629	1, 978	182,813		39, 3- 182, 6
0	S 11	1 30	.07	. 5.35	1, 434	175, 087		175, 0
1	No. 25	, AV	2379	3, 460	150	46, 248	5, 548	40,7
1	2 1 mm		A 5.36	5, 640	1, 161	108, 683		108, 6
-	11 10	1.04	6 31 d	6, 324	1,709	145, 670 130, 780		145, 6
	* *1	74	1 41	3, 315		49, 388		49, 3
	3/6	: 40	3. 1	326		60, 946		60, 9
1.	4 12	- 4	213	30.2		23, 697		23. 6 17. 5
		90	200	249		17, 262 25, 402		25, 4
		44	.3	307	210	30, 442	2, 388	28,0
	~ 00	4.4	1.3	577	286	42,335	2, 511	39, 8
	W 4	1 44	AN	431	332	32, 839	2, 588	30, 2
	6 13	1.74	444	856	200	41, 397 28, 805	5, 100 2, 804	36, 2
	A **	, 50	- 200	630 725	113		3, 120	26, 0 32, 4
44	5	1 100		480	41449	47, 602	3, 880	43, 7
1		49	.UU	625	150	16, 124	1, 608	14, 51
	4 10	44	194	1, 170	91	28, 072	3, 430 6, 153	24.6
	4 14	. VV	4 44	2, 253	832	113,715 e 7,580	0, 153	107, 56 e 7, 58
17		496	W	1, 100	(5)	54, 340	6, 099	48, 24
	0. 14		363	3, 294	433	125, 987	10, 748	115, 2:
1	A 160	1.4	1 1	643	50	23, 627	2, 317	21, 3
.1	1 No.		44	5.70	76 741	29, 601 63, 452	2, 225 5, 412	27. 3° 58. 0-
- 94	4 44	· wh	1504 :	1. 654	309	59, 308	6, 628	52, 68
**	1 14	£ 48	1, 5, 3	2 298	650	41, 110	r supplies a	41, 11

a se when the commission with those for other supplies and repairs

D.-GENERAL STATEMENT OF COST FOR THE PERIOD-Concluded.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 153 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included, but royalty to the etate, when paid, is included under taxes.]

Es- tab-			Supplies at	d repairs.	100 1			
lish- ment num- ber.	Labor.	Officials and clerks.	Timber.	Other.	Taxes.	Gross total.	Value of screenings.	Net total.
134	\$77, 046	84, 275	\$2,051	\$7, 969	\$481	\$92, 722	\$12, 852	\$79, 870
135	15, 106	2, 240	150	355	100	17, 951	1, 318	16, 633
136	4, 475	167	300	831		5, 773	1, 187	4, 586
137	16, 126	380	320	140		16, 966		16, 966
138	7, 430	705	150	245	48	8, 578	708	7, 870
139	59, 122	1,500	1,500	2, 550	75	64, 747	7, 257	57, 510
140	87, 023	2, 400	2, 833	2, 784	225	95, 265		95, 263
141	367, 900	4,750	(a)	a 20, 409	(a)	402, 149		402, 149
142	22, 440	1, 474	728	1, 605	71	26, 318		26, 318
143	3, 727	500	54	285		4, 566		4, 566
144	209, 085	3, 700	4, 216	9, 090	2, 235	228, 326	************	228, 326
145	22, 682	700	878	1, 585	312	26, 157		26, 157
146	9, 719	500	898	1, 200	30	12, 356	***********	12, 356
147	(b)	(6)	(b)	(6)	(b)	(b)	(b)	(b)
148	(b)	(b)	(6)	(b)	(b)	(b)	(6)	(6)
149	(b)	(b)	(b)	(b)	(b)	(6)	(b)	(b)
150	(b)	(6)	(6)	(6)	(b)	(b)	(6)	(6)
151	(b)	(b)	(6)	(b)	(6)	(6)	(6)	(6)
152	149, 318	6, 178	35, 877	18, 887	c 4, 325	c 214, 585	**********	c 214, 585
153	5, 852	527	1, 204	749	c 93	08, 425	***********	c 8, 425
154	4, 877	388	1, 158	583	c 82	07,088	************	a 7, 088
155	15, 361	861	2, 644	2, 464	c 295	¢ 21, 625	**********	c 21, 625
156	17, 352	446	2, 606 59, 288	1,500	c 263	e 23, 257		e 22, 257
157	192, 970 133, 242	9, 165 7, 102		36, 649 22, 159	¢ 12, 316	c 321, 334 c 191, 233	************	c 321, 334
158	193, 253	2, 121	16, 414	43, 010	c 14, 407	e 271, 822		c 191, 233
160	77, 712	1, 166	12, 138	8, 421	¢ 5, 684	c 105, 121		c 271, 822 c 105, 121
161	40, 714	2,008	5, 427	6, 135	1, 146	55, 430		55, 430
162	68, 664	3, 300	9, 263	9, 212	1, 883	92, 322		92, 322
163	33, 233	1, 413	5, 022	6, 012	806	46, 486		46, 486
164	53, 123	2,797	8, 487	7, 878	1, 596	73, 881		73, 881
165	317, 651	7, 573	36, 705	65, 823	9, 957	437, 709		437, 709
166	568, 118	21, 900	83, 721	90, 217	27, 496	741, 452		741, 452
167	104, 815	5, 736	6, 365	20, 809	3, 209	141, 024		141,024
168	43, 543	2, 085	3, 732	3, 669	1, 136	54, 165		54, 165
160	55, 841	3, 360	3, 103	5, 391	1, 845	69, 540		69, 540
170	112, 149	5, 479	6, 536	9, 303	2, 983	136, 450		136, 450
171	139, 702	d1, 164	9, 983	10, 481	(6)	e 161, 330		£ 161, 330
172	31, 058	1,341	1,701	3, 575	(b)	e 37, 675		e 37, 675
173	962, 565	35, 594	70, 535	114, 772	24, 814	1, 208, 280		1, 208, 280

The expenditures for timber and taxes are inseparably combined with those for other supplies and repairs.
 Not reported.

e Including royalty to the state.
d Clerks' salaries only.
e Not including taxes.

E.-ELEMENTS OF COST IN ONE TON OF 2,000 POUNDS.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 150 are on the continent of Europe; and numbers 151 to 173 are in Great Britain. Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included, but royalty to the state, when paid, is included under taxes.

Es-		Labor.		Officials	Sappli repa			Gross	Value of	
lish- ment num- ber.	Miners.	Other.	Total.	and clerks.	Timber.	Other.	Taxes.	total.	screen- ings.	Net
1 2	\$0. 475 . 450	\$0.480 .131	\$0. 955 . 581	\$0. 032 . 022	\$0.002 ,005	\$0.092 .077	\$0.002 .019	\$1.083 .704		\$1.08
3	(4)	(6)	. 825	. 022	.061	.084	.003	1. 029		1.02
4	(a)	(b)	.788	.021	.007	. 030	.001	. 847		.84
5	(a)	(b)	. 789	.011	.006	. 067	. 003	.876		. 87
6	. 700	. 294	. 994		. 023	. 023		1.040		1.04
7	. 900	. 350	1. 250	.041	.044	.079	. 020	1.434	\$0.163	1, 27
8	. 900	. 355	1. 255 1. 118	, 054	.040	.073	. 031	1, 453	, 166	1. 28
10	. 950	.168		.036	.022	. 025	.006	1, 249	- 133	1.11
11	(e) . 725	(6)	1,001	.038	. 024	.029	.004	1,096	.175	. 58
12	(0)	(6)	. 543	, 025	,022	. 037	.021	. 648		. 64
13	.600	. 235	. 835	. 063	.019	. 033	, 005	. 955	. 133	. 82
14	. 500	. 289	. 789	. 029	,010	. 025	.004	. 857	.160	. 69
15	. 625	. 219	.844	. 031	. 028	. 043	.006	. 952	. 137	. 81
16	, 600	. 206	. 806	.068	,020	. 035	. 005	- 934	.133	. 80
17	. 600	. 231	. 831	.034	.015	. 024	. 006	. 910	.133	.77
18	. 700	. 298	. 998	.060	.025	. 060	.005	1.148	. 166	.98
19	.875	.275	1. 150 1. 077	.012	.060	. 065	.008	1. 295	.132	1.16
20 21	. 875 . 825	.282	1. 107	.038	.039	. 061	.006	1. 268	.132	1.08
22	.875	. 240	1. 115	.038	.040	. 062	.006	1. 261	.120	1.14
23	. 825	. 269	1. 094	.014	. 033	. 053	.024	1. 268	.162	1.10
23 24	.725	. 330	1, 055	. 013	.041	. 058	.006	1. 173	. 166	1.00
25 26	. 725	. 212	. 937	, 025	. 021	. 032	.002	1.017	. 159	. 85
26	(0)	(b)	. 590	. 081	. 018	. 035	.007	. 731	*********	. 73
27 28	d.310	. 359	. 669	. 037	.018	. 040	.018	. 781	.100	. 68
28	(e)	(b)	. 822	. 030	.031	.070	- 018	. 971	.160	. 81
-30	. 675	. 263 (b)	, 938 , 850	.067	.034	. 032	.010	1.081	.138	. 94
31	4,200	. 596	.796	.062	.019	. 054	.005	. 936	.094	.84
32	.750	.181	. 931	.068	. 020	. 050	.004	1. 073	.159	. 91
33	. 750	.185	. 935	.045	. 020	.020	,006	1. 026	. 159	. 86
34	£. 675	.315	. 990	.111	. 048	.017	. 005	1. 171	. 120	1. 05
35	.448	.092	. 540	.009	.021	. 020	.020	.610		. 61
36	. 450	.150	. 600	. 057	.040	. 033	.000	. 739		.73
37	. 448	.077	. 525	.011	. 021	.028	.012	. 597		. 59
38	. 467	.091	. 558	.013	.016	. 051	.018	. 656		. 65
40	. 446 . 750	.083	1. 208	.019	.018	.165	.009	1. 534	.212	1. 32
41	. 825	. 238	1. 063	156	.027	.070	.004	1. 320	.344	.97
42	. 650	,118	. 768	. 040	.038	.383	.002	1. 231	.318	.91
43	. 650	.104	. 754	.010	.011	. 021	.002	. 798	. 055	.74
44	. 650	. 130	. 780	. 099	. 000	. 035		. 923	.117	.80
45	. 650	. 838	1.488	. 037	. 021	. 042	.007	1. 595	. 321	1. 27
46	d. 338	. 453	. 791	.041	.009	. 075	.001	917	.130	. 78
47	.790	. 100	. 890	. 047	. 035	. 034	.008	1.014	.106	. 90
48	. 800	. 364	1. 164	. 066	.070	. 098	.001	1. 399	.145	1. 25
49 50	. 650	. 376	1. 026 1. 081	.061	.017	. 039	.008	1. 151	. 237	1.00
51	. 650	. 201	. 851	.022	.010	, 063	.001	. 947	. 165	. 88
52	(6)	(b)	. 935	.089	.004	214	.005	1. 337	.068	1. 26
53	. 850	.306	1. 156	.084	.050	. 039	.001	1. 330	. 232	1.09
54	, 925	. 334	1. 259	.072	. 050	.100	.001	1. 482	. 191	1. 29
55	. 650	. 153	. 803	. 083	.010	.017		. 913	. 112	. 80
56	. 650	. 227	. 877	. 044	. 028	. 050	.002	1.001	.117	. 88
57	. 650	. 211	. 861	. 069	.010	. 026	. 001	. 967	.154	. 81
58	. 800	. 300	1. 100 1. 060	.069	. 022	. 018	.001	1. 210	.092	1.11
59	.860	. 200	1.000	.150	.030	.050	.002	1, 292	.206	1.02

⁶ Miners' rates vary.

5 Not reported.

6 No hand miners employed.

6 No hand miners employed.

6 Loaders in machine mine.

6 Only a few hand miners employed; mostly machine work; hand miners paid 67.5 cents per ton.

7 Only a few hand miners employed; mostly machine work; hand miners paid 70 cents per ton.

E.-ELEMENTS OF COST IN ONE TON OF 2,000 POUNDS-Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included, but royalty to the state, when paid, is included under taxes.]

Es- tab- lish-		Labor.		Officials	Suppli				Value of	Net
ment num- ber.	Miners.	Other.	Total.	clerks.	Timber.	Other.	Taxes.	Gross total.	screen- ings.	total.
61	\$0.630	\$0. 121	\$0,751	\$0,073	\$0.036	\$0, 120	\$0,013	\$0.993	\$0.218	80, 775
62	. 810	. 509	1.319	. 182	. 035	.118	.010	1.664	. 352	1. 312
63	. 650	, 339	.989	. 025	. 015	.082	.004	1. 115	. 154	. 961
64	. 650	. 115	. 765	.076	.016	. 061	. 006	. 924	. 143	.781
66	. 650 . 835	. 321	1,042	.042	.017	.033	.001	1.064	.260	. 804
67	(a)	(6)	.703	.019	.011	. 022	.001	1. 163	.106	. 650
68	. 650	. 439	1.089	.024	.052	. 204	.002	1, 371	.317	1,054
69	. 050	.319	. 969	. 036	. 024	. 070	.001	1, 100	.240	. 860
70	. 650	. 223	. 873	. 035	.015	.051	. 004	. 978	. 415	. 563
71	. 650	. 266	. 916	.091	.024	.015	.013	1, 059	. 373	. 686
72	. 803	. 492	1. 295	. 156	.036	. 154	. 002	1.643	. 185	1. 458
73	. 750	.771	1. 521	.043	. 086	. 082	. 037	1.769	.527	1.243
74	.700	. 169	. 959	. 018	.019	, 040	.001	1.037	.105	, 931
75 76	(c) , 500	(b) . 210	.753	.011	.014	. 030	.001	. 809 . 856	.009	. 740
77	658	. 187	, 845	. 049	.021	.042	.018	. 975	.113	. 861
78	, 650	. 446	1.096	. 069	.080	. 096	.004	1,345	. 193	1, 153
79	. 675	. 213	. 888	,030	,017	. 044	.024	1,003	. 123	. 880
80	, 650	. 202	. 852	. 022	.016	. 025	.001	. 916	. 066	. 850
81	. 790	. 302	1.092	.010	. 076	. 098	.016	1, 292	. 108	1. 184
82	. 790	. 290	1.080	.008	. 061	. 079	.017	1. 245	. 110	1. 133
83	. 790	. 185	. 975	. 009	. 021	. 088	.007	1. 100	. 110	. 990
84	. 790	. 280	1.070	.032	. 004	.068	.004	1.178	. 087	1. 091
86	.790	. 190	. 636	.028	.031	.025	.004	1. 123	. 087	1.036
87	446	.077	. 523	. 027	. 035	.080	.002	667		. 607
88	.790	. 245	1. 035	. 066	,014	. 030	,006	1, 151	.087	1,064
89	. 730	. 251	. 981	. 090	.022	009	.003	1, 105	. 087	1.018
90	. 446	. 131	. 577	. 029	. 020	. 044	.008	. 678		. 678
91	. 733	. 194	. 927	.064	. 024	. 059	.004	1,078	.119	. 959
92	. 600	. 186	.786	.011	. 040	. 046	. 003	, 896	*******	. 886
93 94	.790	. 093	. 883	062	. 031	. 058	. 007	1.041	. 120	. 921
95	. 446 (e)	. 156 (b)	. 602	.022	(d) .024	d. 055	.007	. 686		. 686
96	(e)	(6)	. 988	. 081	.036	.047	.029	1, 181	. 087	1,094
97	, 450	. 174	. 624	.012	(d)	4.048	.008	. 692		. 693
98	. 446	. 196	. 642	.005	.015	. 049	.006	.717		. 717
99	. 446	, 160	. 606	.044	.009	.015	.001	. 675	********	.675
100	. 450	. 200	. 650	. 050	. 030	. 055	.007	. 792		. 191
101	. 735	. 168	. 903	. 040	.019	. 065	.005	1.032	.173	. 859
102	.730	. 161	. 624	. 018	. 035	.017	.009	. 970	. 078	. 638
103	. 446	. 170	. 616	.002	.004	.008	.005	. 638	**********	. 674
105	.446	. 085	. 531	.010	(d)	d . 031	.005	.578		. 578
106	450	. 259	.709	.012	(d)	d . 036	.006	.763		. 763
107	(e)	(b)	. 927	. 021	. 032	,080	.003	1.063	.128	. 933
108	. 446	. 080	. 526	. 004	.018	. 031	.006	. 585	***********	. 585
109	.428	. 091	. 519	.007	.017	. 025	.007	. 575		. 573
110	.431	. 186	. 617	. 004	.011	. 042	.001	. 675	*********	. 675
111	. 450	. 230	. 680	. 046	. 030	. 055	. 008	. 819	*******	. 819
112	. 446	. 132	. 578	.005	.002	.008	********	, 593		. 593
114	, 450	.091	. 537	.004	.005	.008		. 556		. 556
115	. 446	.197	. 643	.013	.002	.008		, 666		. 666
116	.790	.117	.907	. 091	.027	. 030	.007	1,062	. 083	. 979
117	.790	. 167	. 957	.027	. 032	. 022	.007	1.045	.062	. 983
118	. 790	. 190	. 980	. 032	.020	.014	.071	1, 057	. 083	. 974
119	. 730	. 170	. 900	.078	.010	. 021	. 005	1.014	.125	. 889
120	. 730	. 174	. 904	. 053	. 043	. 023	.004	1, 027	. 100	. 927

a No hand miners employed.

b Not reported.

c Only a few hand miners employed; mostly machine work; hand miners paid 65 cents per ton.

d The expenditures for timber are inseparably combined with those for other supplies and repairs.

s Miners rates vary.

M. -ELEMENTS OF COST IN ONE TON OF 2,000 POUNDS-Concluded.

Establishments numbers I to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 151 to 173 are in Great Itrians. Insurance, interest, depreciation of value of plant, charges for freight of product to place of tree delivery, and revally to the owners of the soil are not included, but royalty to the state. The paid, is included under taxes.

e-		Labor		Officiala	Suppli repa			Gross	Value of	Net
ak out	Minors.	Other.	Total.	olerks.	Timber.	Other.	Tares.	total	ings.	total.
	An 1980	80, 229	90, 959	80, 034	\$0,008	\$0, 021	\$0.004	\$1.024	\$0,090	\$0,93
	\$0. Y80 (90	919	1.002	. 022	.017	.011	, 009	1.061	.087	. 974
23	7-969	949	1.013	. 042	. 025	. 044	.010	1.133	.113	1.00
3	7.60	745	. 775	.041	.041	. 020	.007	.970	. 052	.90
22.1	404	120	839	,048	,060	.100	(a)	b . 760		8.76
37	746	180	. 1002	, 035	. 032	. 019	.004	. 952	.107	. 84
14	266	6,04	, 929	, 008	.011	. 026	. 003	.977	. 083	. 89
4	140	117	877	. 040	.007	. 026	.002	. 952 1. 153	380	1.06
16	760	240	916	038	.023	.022	.012	1. 016	.087	, 92
4	727	161	1881	. 039	. 031	. 049	.005	1.005	.112	. 89
Ξ.	460	193	. 579	, 087	(0)	ø. 05¢	.011	. 690	*******	. 09
11	Cobe	(16)	. 764	. 043	, 030	.081	.005	1. 135	.131	1.65
18	3.46	3aa 27a	100	. 142	.010	. 150	.000	1. 043	. 214	. 82
9	540	107	613	015	.012	. 005		. 645		. 64
15	118	127	919	, 087	.018	. 030	.006	1.053	.087	. 96
8	603	1661	. 817	. 021	. 031	. 035	.001	. 895	.100	. 75
81	122	840	1, 850	. 037	.044	. 043	.004	1. 478		1.47
λí	335	111	443	. 008	,020	f. 039	.002	. 741		. 74
ŧ.	660	166	606	. 094	.010	. 053		. 853		. 85
2	444	972	641	.000	.011	. 023	.006	. 580		. 56
١!	4114	334	7.14	. 023	. 029	. 051	.010	. 851		. 85
4	3(4)4	174	614	. 035	. 002	. 084	.003	. 862		. 86
7	131	Guill	100.5	. 937	. 062	. 145	g.072 g.062	g 1.309 g.950		91.30
1		150	741	- 011	022	. 083	9.058	9.951		9.95
21	331		664	. 047	. 013	, 100	9.068	g 1. 119		g 1. 11
ř	2/3	611	1 160	. 057	.042	. 064	0.061	9 1. 393		y L 39
11	40	1961	613	- 026	, 149	. 079	g. 018	g. 894		9.80
44	41	(41	1 044	. 078	. 180	125	g.014 g.018	g 1. 258 g 1. 520		g 1. 25
1	3	141	913	U51	. 157	. 146	0.018	g 1, 285		91.2
M.	41	State	941	.025	. 147	. 090	9.015	g 1. 258		91.23
	111	101	0.03	. 013	. 087	. 034	9.034	g.470		9.47
d	131		447	. 017	. 039	. 052	g.029 g.059	g. 454 g 1. 110		9.45
98	101	4115 0811	7.64	014	124	. 080	g.058	g 1. 072		91.07
ļu	pa	1 O man	841	046	194	. 141	, 026	1. 268		1. 26
10	19	16 1	914	048	. 129	. 128	. 026	1. 284		1. 28
01	11	44	1 999	044	. 163	, 198	. 026	1.511		1,51
16	14	(0)	673	.010	. 140	. 129	. 026	1. 213		1. 21
13	141	191	614 674	U17	. 081	.144	. 022	. 885		. 96
16	1.14	198	7314	11.14	. 04.1	110	. 022	. 947	[. 94
13	100	Short	tes	043	. 076	. 074	. 023	1.096		1.09
W.		111	747	044	Will	Bist.	. 023	. 840		. 86
100	terry	for.	71.1	0.14	. 154.4	062	. 020	b. 959		. 91
1	H.	111	630	4 447	945	. 002	(a) (a)	b 1. 002		b.95
1	111	164	nia	441	.004	. 104	. 032	1.090		1, 09
11	44	1.94	-	1.44	1	1,449	1	4-1-015	10.22.22.2	20.74

As infinitive is a state of a trade of the trade of the combined with those for other supplies and repairs.

The reposition of the trade of the trade of the combine work, hand miners paid 74 cents per ton.

The per ton a very trade of the trade of the combine with those for other supplies of the combined with the combined with the

and the control of th

TABLE VIII.—COST OF PRODUCTION OF BITUMINOUS COAL AT VARIOUS MINES IN VARIOUS STATES—Continued.

F.—PER CENT. OF RACH ELEMENT OF COST IN ONE TON OF 2,000 POUNDS.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 187 to 166 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. This table is based on the proceding one, neglecting the last two columns; to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader is referred to that table for such information as they furnish. The reason for neglecting the column of deductions for value of acceenings in a table of percentages is obvious.]

Es- tab- lish-		Labor.		Officials	Sapplies a	nd repairs.		
ment num- per.	Miners.	Other.	Total.	and clerks.	Timber.	Other.	Taxes.	Total.
1 2	43. 86 61. 92	44. 33 18. 61	88, 18 82, 53	2.96 3.12	. 19 . 71	2. 49 10. 94	. 19 2.70	100 100 100 100
ŝ	00. 72	18.01	30 . 18	i iii	1 5.93	8.16	. 29	100
4 5			93. 03 90. 07	2.48 1.28		2. 54 7. 6 5	. 12	100
5	67.31	28, 27	96. 58	LZ	.00 2.21	2.21	. 34	100 100
7	67. 31 62. 76 61. 94	2L 41	87. 17	2.86	1 2.07	5.51	1. 39	100
8	78.06	24. 48 13. 45	88. 37 86. 51	1.72	2.75 1.20	£ 63 2.93	2. 13 . 48	100 100 100
10		25. 18	84. 29	1.90	1.30 1.79 1.19	4.81	1.72	100 100 100 100
11 12	66. 15	23.18	91. 33 83. 80	2.47 2.86	1 10	2.65 & 71	. 26	100
13	62. 83	24.61	87. 43	6.60	1.99 1.17	2.46	. 62	100
16 15	58.34 65.65	21.73	92, 06 88, 65	1. 36 1. 26	1. 17 2.94	2. 92 4. 53	.47 .63	100 100 100
16	64.24	21.06	86. 30 91. 32 86. 96 83. 80 83. 59	i 7. 22	2 14 1. 65	8. 75	63 1	100
17	66. 93 60. 97	25, 39	91.33	1.73	1. 65 2. 18	1.64	.061	100
18 19	67.57	25. 86 21. 23	21.20	1.2	4.63	Loz	.43	100 100 100
20	71.90	16.60	83. 59	. 49	& 51 8. 98 8. 17 4. 18	5. 01	.49	100
21	65, 06 69, 39	22. 24 19. 03	87. 30 84. 42	3. 00 3. 01	1 17	5, 20 4, 22	1.43	100 100 100 100
23	69. 39 65. 06	21, 22	66. 29 88. 84	2.47 1.11	4 18	4.18	1.00	iee
24	61. 81 71. 29	24. 13 20. 54	88. SA 92. 13	1.11 2.46	2, 50 2, 06	4.94 3.15	.51 .20	100 100
26	. .		90. 71 88. 65	11.06	133	L 79	96	100
27	39. 64	45.91	88, 55	L 73	2.48 2.86 3.19	& 13 7. 21	1 22	100
	62.44	21, 33	84. 80 84. 77 86. 43	2.00 8.20	1 2.15	2.86	.96 2.30 1.86 .92	100 100 100 100
30	21. 37	63, 67	94.43	2 19	9 19	2.86 3.72		100
31	21. 37 60. 90	16.87	8. 04 90. 77	1 2 2	2.63 1.86 1.95	£ 77	.54 .37	100
33	73, 10	18.82	01 12	8.34 4.30	1.95	1.95	l Rati	100 100 100 100 100
31 35	57. 64 73. 44	26. 90 18. 66 20. 30 12. 60 13. 87	84, 84 86, 52 81, 19	9.48 1.48	£ 10	1.45	.43 1.28 1.32	100
36	60. 29	20.30	81. 19	7.71	8.41	447	1.33	i
37	75. 04 71. 19	12.00	87. 94	1. 84 1. 66	2.53	4. 60 7. 78	2 61 2.74	100 100
34 39	73.23]]] [[] []	83, 96 90, 96 78, 75	L 12	244	8.58 10.76	1.48	100
40	48. 89	20. 35	78. 75	7.76	2.67	10.76	.00	100
41 42	62, 50 52, 80	18. 03 9. 50	90. 23 62. 39	11.62	2.05 3.00	5, 30 31, 11	:16	100 100 100
43	81.46	13.03	94. 49	1.25	1.36	1.0	. 25	100
44 45	70. 42 40. 75	14.08 52.54	84, 59 93, 29	16.73	. 92 1, 33	1.79 1.63	44	100 100
46			84. 26 87. 77	4.47	1.33 .96 3.45	8, 18	l '.11 i	100
47 48	77. 91 57. 18	9. 96 20. 02	87.17 83.29	4.64 4.73	1.65	1. 25 7. 01	.70 .07	100 100 100
49	56.47	22.67	90. 14	1 20	1.48	1.39		100
50	63. 89	37. 06 21. 22	92.96 30.36	.52 2.33	.77 1.06	8, 67 8, 65	.11	100
50 51 53		-1.23	60 , 63	6.00	7. 63	10.01	.37	100
53	63. 91	23.01	88. 93	6.33	2.76	2.93	.07	100
54 55	62.41 71.19	22.54 16.76	84. 95 87. 95	1.00	3.37 1.10	6, 75 1. #6	.67] 0 0 100
56 57	64.93	22.68	87. 61	4.30	2.10	4.00	.39	100
57 5e)	67.22 66.13	21. #3 24, 79	89, 04 90, 91	7.14 8.70	1.03	2.66 1.49	.10	100 100
50	66, 56	15.48	82,04	11.61	122	2.87	:16	100
60	61, 35	22, 32 12, 19	\$1, 67 75, 63	8. 14 7. 33	122	8, 97 12, us	L 31]## 10 0
61 62	44.68	30. 50	79. 27	10.94	2, 10	7.00	- A	100
63	56.30	30, 40 12, 44	80, 70 HZ, 79	2 21	1.35	7.35 6.00	. as	100 100
64	70, 35 61, 40			185	1.73	1 16	:	iõ

F. - PER CENT: OF EACH ELEMENT OF COST IN ONE TON OF 2,000 POUNDS. - Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. This table is based on the preceding one, neglecting the last two columns; to avoid deplicating the notes, which would be the same in substance, they are here omitted and the reader is referred to that table for such information as they furnish. The reason for neglecting the column of deductions for value of acceerings in a table of percentages is obvious.]

Es-		Labor.		Officials	Supplies an	d repairs.	ACTUAL	
lish- neut tum- ber.	Miners.	Other.	Total.	and clerks.	Timber.	Other.	Taxes.	Total.
66	71, 80	17. 80	89.60	3, 27	3. 01	4.04	.08	10
67			92, 99 79, 43	2.51 1.75	1. 46 3. 79 2. 18 1. 53	2.91 14.88	13	10
68	47.41 59.09	32. 02 29. 00	79. 43 88, 09	1.75 3.27	3. 79	14. 88 6. 37	.15	10
70	66. 46	22, 80	89. 26	3. 58	1, 53	5, 22	.41	10
71	61.38	25, 12	86. 50	8.59	2. 26 2. 19	1. 42 9. 37	1. 23	10
70 71 72 73	48. 57 42. 40	29, 95 43, 58	78. 82 85. 98	9, 50 2, 43	2. 19 4. 86	9.37 4.64	2.09	10
74	76.18	16.30	92 48	1, 73	1. 83	3, 86	10	10
75			93.08	1. 73 1. 36	1.79	3.71	. 12 1	10
76	58. 41 67. 49	24. 53 19. 18	82. 94 86. 67	5. 49 5. 02 5. 13 2. 99 2. 40	1.99 2.15 5.95 1.70 1.75 5.88	9. 46	1.85	10
78	49 98	33. 16	81.48	5. 13	5. 95	4. 31 7. 14	. 30 2. 39	10
78 79	67.30	21, 23	81. 48 88. 53	2, 99	1.70	4 99	2.39	10
80	70, 96	22.05	93. 01	. 77	5 88	7.50	1.24	10
82	63, 45	23, 29	93. 01 84. 52 86. 74 88. 64	.64	4. 90 1, 91	2. 73 7. 59 6. 35	1. 24 1. 37	10
83	67. 30 70. 96 61. 15 63. 45 71. 82	33. 16 21, 23 22, 05 23, 37 23, 29 16, 82	88. 64	. 82	1.91	8 00	. 63	10
82 83 84 85	• 70 35	23. 77 22. 53 27. 11	90, 83 92, 88	2.72 1.78	2.76	5, 77 2, 22 1, 14	.34	10
86	63. 62	27. 11	90. 73	4.00	1. 28 5. 25 1. 22 1. 99	1.14	2, 85	10
87	66, 87	11.54	78. 41	4. 05	5, 25	11, 99	. 30	10
88 88	68. 64 66. 06	21. 28 22. 72	89. 92 88. 78	5. 73 8. 15	1.22	2. 61	.52 .27	10
90	65. 78	19.32	85. 10	4.28	2, 95 2, 22 4, 52	6, 49	1.18	1
91	68.00	18.00	86, 00	4. 28 5. 94	2, 22	5.47	.37	10
92	67. 72 75. 89	20,99 8,93	88.71 84.82	1, 24 5, 96	2.98	5, 19 5, 57	.67	10
94	65, 01	22.74	87.75	3, 21 1, 66		8, 02	1.02	10
95			92, 39 83, 66	1.66 b.86	3. 32 3. 05	1, 80	2.45	10
96 97	65. 03	25. 14	90. 17	1.73	3. 05	6.94	1.16	10
98	62, 20	27.34	89, 54	6.52	2.09	6, 83	. 84	10
100	66. 08 56. 82	23. 70 25. 25	89. 78	6. 52	1. 33 3. 79	2, 22 6, 95	.15	10
101	71, 22	16.28	82.07 87.50	3, 88	1.64	6, 30	,48	10
102	71.22 75.26	16, 60	91.86 97.81	3. 88 1. 85	3. 61	1. 75	. 93	10
103	69, 91 66, 17	27.90	91, 30	1.78	2. 8	1, 25 4, 01	.74	10
105 106	77. 16 58. 98	25. 22 14. 71 33. 94	91 87	1. 73		5, 36	1.04	1
106	58. 98	33. 94	92, 92 87, 21 89, 91	1. 73 1. 57 1. 97		4.72 7.53	.79	10
107	76. 24	13. 67	89. 91	68	3, 01	5. 30	1.03	1
109	74. 43	15. 83	90, 26	1.22	2, 95 1, 63	4.35	1, 22	1
110	63. 85 54. 95	27. 56 28. 08	91. 41 83. 03	. 59 5. 62	1. 63 3. 66	6, 22	. 15	10
112	75. 21	22, 26	97. 47	. 84	. 34	1. 35	. 90	10
113	71.43	22, 26 25, 71	97.14	. 64	95	1.27		. 16
114	80. 21 66, 97	16, 37 29, 58	96, 58 96, 55	1, 95	1, 26 . 30	1.44		10
116	74.39	11.02	85. 41 91. 58	8, 57	2.54	1, 20 2, 82 2, 11	. 66	10
117	75. 60	15.98	91.58	2, 58 3, 03	2.54 3.06 1.89	2.11	. 67	10
118	74. 74 71. 99	17. 98 16. 77	92. 72 88. 76	7, 69	. 99	1. 32	1.04	10
120	71.08	16.94	88, 02	5, 16	4, 19	2. 07 2. 24 2. 05	. 39	10
121	71. 20	22.36	98, 65	3, 32	59	2.05	. 39	16
122 123	74. 46 64. 43	19. 98 24. 89	94. 44 89. 32	2.07 3.71	1.60 2.21	3.88	. 85	10
124	62.94	29.10	92, 04	2, 85	. 59	4. 16	. 30	10
1115	75. 26	13.50 19.74	88, 76	4, 23	4.23 7.89	2,06	. 72	10
127	52. 89 76. 68	13. 87	72, 63 90, 55	6. 32 2. 68	7. 89 3. 36	13. 16 I. 99	.42	10
128	80.86	13. 87 14. 23	95, 09	. 82	1, 12	2 66 2 73	. 31	1
126 127 128 129 130	76. 68 63. 31	15. 44 23. 16	92.12 86.47	4, 20	. 74	2. 73	. 21	1
131	68. 90	21. 26	90. 16	10.15 3,74	1.21 2.26	1. 91 2. 66	1.18	1

F.—PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,000 POUNDS-Concluded.

(Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. This table is based on the preceding one, neglecting the last two columns; to avoid deplicating the notes, which would be the same in substance, they are here omitted, and the reader is referred to that table for such information as they furnish. The reason for neglecting the column of deductions for value of acroenings in a table of percentages is obvious.

Es- tab- lish		Labor.		Officials	Supplies as	ed repairs.		
ment num- ber.	Miners.	Other.	Total.	and elerks.	Timber.	Other.	Tares.	Total.
133	72.64	15.02	87. 66	1.88	2.08	4.88	.50	100
133 134	65. 22	17. 66	82, 90	8. 26		7.25	1.50	100
134	64.32		88.14	4.56	8.18	2.50	.52	100
135 136	64, 32 50, 81	19. 83 26. 75	84, 14 77, 56	12.51 2.88	.88	1.94 14.28	.89	100 100
137	69.15	25.89	95, 04	13	5, 18 1, 96	7.77		100
138	69. 33	17. 28	86, 61	8. 26	1 1.71 (2.85	.57	100
138 139			91. 28	2.85	2.35 2.95	3, 91	l iil	100 100
140	47. 26	43. 98	91, 34	2.50	2.95	2.91	11 27	100
141	63. 57	27. 89	91. 46	L 14		7.40		100
142	67. 48	17.81	85. 29	5. 67	2.70	6.07	.27	100
143	56. 62 77. 24	22.99	81. 60	11. 02 1. 55	1.17	6.21 2.97		100
144	77. 24 58. 75	14.31 27.97	91, 55 86, 72	1 270	1 1 1 1 1	5. 90	1.02 1,18	100 100
145 146	58.00	20.65	78. 65	4.06	7. 19	9. 75	. 25	100
147	32.40	43.46	75, 36	183	L 75	11. 🗱	5.50	100
148	38. 89	48. 32	82, 21	136	1 2.74 /	5, 26	6.53	100
140	89. 33	42.37	81.70	1, 16	2.31	8, 73	6. 10	100
150 151	83. 24	45, 67	78. 91	4. 20	1, 34 3, 02	9. 47	6.08	190
151	42.71	41.21	83. 92	£ 00	3.02	4. 50	4.28	100
152 153			69. 57	2.91	18.67	2.84	2.01	100
153			69. 47	6. 20	14.81 16.33	8.91	1. ii 1. ii	100
154 155 156			68, 82 71, 05	8. 46 3. 97		8. 23 11. 36	1.40	100 100
156	25.01	52.94	77. 98	1.99	12. 22 11. 69	7. 15	1.19	100
157	25, 74	34. 26	60, 00	2.77	18.51	11.49	7,55	100
158	28, 85	40.97	69, 82	3.75	8.59	11. 45	7. 23 6. 39	100
159	34, 59	36, 49	71.08	. 81	7.03	15, 77	6.31	100
1 6 0	65, 48	8.40	73. 88	1.12	11.57	8. 03 11. 12	1 641	160
161			73.42	2. 63	9.78	11. 12	2.05	100
162			74. 38	3, 58	10. 05 10. 79	9, 97	2.03	100
163	• • • • • • • • • • • • • • • • • • • •		71. 48 71. 80	3. 04 3. 79	10.79	12.97 10.64	1.73	100 100
164 165	• • • • • • • • • • • • • • • • • • • •		71. 89 72. 50	3.79 1.77	11.54 8.44	15.00	2.14	100
166	54, 69	2L 92	76. 61	2.94	4.69	12, 20	2.29 2.73	100
167	J4. 00	26.00	74.34	4.01		11.79	1 1 1 1 1 1	100
168	47. 53	32.85	80, 38	3.83	4.58 4.54 6.94	6,78	2.33 2.10	100
169		l	80. 34	4.80	1 441	7. 73	2.61	100
170	50.71	31, 50	82. 21	8, 95	4. 53 6. 26	6.81	1.39	160
171			86. 55	. 73	(.26)	0.46		100
172 173	41. 42	41.02	82.44	8.59	(49)	9.48		100
173			79. 63	2.94	5.87	9, 54	2.03	100

G .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers to 148 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 151 to 173 are in Great Britain.]

	Additional cost.						
Esfablishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
	(a)				(a)		
	(a)		\$2,065	\$1,841	6 83, 9		
	(a)	\$58, 162	15, 120	**********	b 58, 1		
	\$290	2, 500	15, 120	***********	15, 4 6 2, 5		
	(a)	2, 500			62,		
	(a) (a)				(a)		
	(a)				(4)		
	(a)				(a)		
	(a)	**********			(a)		
***************************************	(a)		**********	5,000	65,		
	(a)		**********	***************************************	(a)		
	(a) (a)				(a)		
	(a)			765	(a)		
***************************************	(a)			3, 192	63,		
	(a)				(a)		
	(a)			1,379	b 1,		
***************************************	(a)	***********	**********	**********	(a)		
	(a)	************		*********	(a)		
201-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	(a)	219			6		
7-14 C-21-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	(a) (a)	287		***************************************	(a)		
	(a)	201			(a)		
	(a)			6, 095	b 6,		
	(a)			1,483	61,		
- denominamental	(a)				(a)		
situation commen	(a)				(a)		
	(a)		*********	*********	(a)		
1.511 STREETHINGSTONES	(a)				(a)		
Towns of the formation	(a) (a)		*********		(a)		
	(a)			**********	(a)		
	(a)			351	b:		
THE STREET	(a)				(a)		
war and and an annihila	(a)		Correction.	********	(a)		
	(a)			**********	(4)		
- ac minimum.	(a)	******	***********		(a)		
	(a) (a)			5, 786	65,		
	(a)		************	4, 615	54.		
	(a)		2, 965	1, 185	64,		
	(a)	152	500	9, 141	8 9.		
	(a)			636	b1		
A CONTRACTOR OF THE PARTY OF TH	(a)	**********	***********	664	, b		
	(a)	3, 599	9 700	7, 590 6, 927	b 11,		
1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(a) (a)		2, 309 3, 632	13, 619	6 9, 1 6 17, 1		
311.000.0000000000000000000000000000000	(a)		2,002	241	b:		
	(a)	700		2, 880	b 3,		
- constitutioness	(a)	**********			(4)		
(1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,	(a)			935	- 61		
****************	(a)	*********	*******	*********	(4)		
Taxaniminamore	(a)			11, 259	611,		
410000011111111111111111111111111111111	(a)			3,422	63.4		
	(4)			4.225	84.		
	(a)	156	8, 685	16, 300	6 25, 1		
	(a)			3.500	63.5		
10.11.11.10.11.11.11.11.11	(a)	********		5, 331	\$ 5, 3		
	(4)	527	9	1, 275 1, 699	\$ 5, 1 \$ 1, 8		
177 21114 (1144)	(4)	3, 000	3, 000	1, 639	b 1		
3.5000000000	(4)	850	3,093	5, 097	121		
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	rai			5, 195	\$5,6		
	(4)			5, 857	35.8		
	(4)			10, 366	\$ 10, 2		

a Nat reported.

b Not including insurance.

G .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS-Continued.

[Establishments numbers 1 to 146 are in the United States numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

	Additional cost.						
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
08	(a)		\$2, 089	\$3, 333	b \$5, 4		
59	(a)	\$168	5,000	3, 600	b 8 7		
70	(a)	605		3, 600 2, 325	b 2, 9		
n	(a)	2,716			b 2, 9, b 2, 7 b 2, 1		
2	(a)			2, 198	b 2, 1		
3	\$120	597	***********	589	1, 3		
4	(a)		1,000	2, 017	b 2, 0		
5	(a)		1,000	24, 907	b 25, 9		
6	(a)	40	1,000	2, 160	b 3, 2		
7	(a)	17, 441	***************************************	10, 217	b 27, 6		
8	(a)	***********	870	3, 263	b 4, 1		
9	(a)	**********	**********	***********	(a)		
0 1	(a)				(a)		
2	(a)				(a)		
3	(a) (a)				(a)		
4	(a)				(a)		
5	(a)				(a)		
6	(a)		***************************************	***************************************			
7	(a)			625	(a)		
8	(a)			0.0	(a)		
9	(a)			1,898	61,8		
0	(a)			4,000	(a)		
l	(a)		1213222	1, 400	61.4		
2	(a)			2, 100	(a)		
3	(a)			648	61,9		
	(a)		-,	8, 158	b8,1		
5	(a)		792	9, 138	89.9		
6	(a)	8, 563	815	9, 013	b 18, 3		
7	(a)	(a)		15, 110	c 15, 1		
8	(a)		1,037	11, 964	b 13, 0		
9	(a)	900	800	2,410	b 4, 1		
0	(a)	1, 192		3, 972	b 5, 1		
l	(a)		7,500	5, 250	b 12.7		
2	(a)				(a)		
3	(a)	1,000		5, 473	b 6, 4		
4	(a)		3,000	5, 209	68,2		
5	(a)		7,063	33, 904	b 40, 9		
6	(a)	264	5, 083	24, 590	b 29, 6		
7	(a)	261	1,088	3, 379	b4.7		
8	(a)		2, 156 3, 171 2, 250	**********	82, 1 830, 2		
9	(a)		3, 171	27, 126	b 30, 2		
0	(a)	**********	2, 250	20, 772	0 25, 0		
1	(a)	1, 808 1, 500		6,028	825, 0 87, 8 815, 3		
3	(a)	1,500		13, 830 4, 197	0 15, 3		
4	(a) (a)	600		3, 584	b4.1		
5	(a)	750		3,066	63,8		
6	(a)	130		5,000	(a)		
7	(a)				(a)		
8	(a)				(a)		
9	(a)			4, 287	64,2		
J	(a)				(a)		
1	(a)			3, 471	b 3, 4		
	(a)				(a)		
3	(a)				(a)		
·	(a)				(a)		
5	(a)	1, 789	(a)	712	b 1, 7		
6	(a)	(a)	(a)	712	47		
7	(a)				(a)		
8	(a)		************	*********	(a)		
9	(a)			2, 483	624		
0	(a)				(a)		
1	(a)	**********			(a)		
2	(a)	1, 215	2, 500	***********	b 1, 2		
3	(a)	1,800	2, 500	5, 321	8 9. 6		

a Not reported.
b Not including insurance.
c Not including insurance and interest.
d Not including insurance, interest, and depreciation of value of plant.

G.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS-Concluded.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Deminion 6f Canada; numbers 1:2 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

	art of the second	Additional cost.						
Establish	Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
134 .		(a)	\$864	\$4, 914	\$3, 729	b \$9,507		
135 .		(a)				(a)		
36 .		(a)			461	b 46		
37 .		(a)	240		1,664	b 1, 90		
38 .		(a)	Lacore and Lacore			(a)		
		(a)	250	1,809	6,715	68,77		
		(a)	200	2,000		(4)		
		(a)	(a)	(a)	54, 254	¢ 54, 25		
		(4)	100)	710	1,775	6 2 48		
		(a)			669	b 66		
		(a)			000	(4)		
	······	(a)				(a)		
22.						(4)		
		(a)			***************************************			
		(a)	(a)	(a)	(a)	(a)		
4		(a)	(0)	(a)	(a)	(a)		
		(a)	(4)	(a)	(a)	(a)		
	·····	(a)	(a)	(a)	(a)	(a)		
	***************************************	(a)	(a)	(a)	(a)	(a)		
	*************	(a)	13, 785	12, 608	*******	b 26, 39		
	***************************	(a)				(a)		
	***************************************	(a)				(a)		
		(a)	**********			(a)		
	***************************************	(a)	945	1, 239	**********	b 2, 18		
57 .		(a)		13, 705		b 13, 70		
58 .		(a)		32, 634	2,837	b 35, 49		
59 .		(a)				(a)		
60 .		(a)	3, 499	3, 332		b 6, 83		
61 .		(a)			5, 542	65,54		
63 .		(a)			9, 109	b 9, 10		
61.		(a)			3, 899	b 3, P9		
		(a)		212:00:210	7,718	67, 71		
		(a)			63, 586	b 63, 58		
		(a)		54, 758	94, 021	b 148, 77		
		(a)	603	10, 171	13, 477	b 24, 25		
		(a)		1, 119	5, 817	66,93		
		(a)		1, 816	12, 868	b 14, 68		
		(a)		3, 444	19, 663	6 23, 10		
		(a)		0, 199	18, 282	b 18, 28		
					5, 124	e 5, 1:		
		(a)	(a)	(a)		b 141, 28		
13.		(a)			141, 289	0 141,		

s Not reported.
b Not including insurance.
s Not including insurance, interest, and depreciation of value of plant.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,000 POUNDS,

[Retablishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe, and numbers 161 to 173 are in Great Britain.]

Establishment number.	(a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	\$0.116 .002	Depreciation of value of plant. \$0.050	Royalty to owners of soil. \$0.045	Total. (a) b \$0.0 b .1 -0 b .0 (a) (a) (a) (a) (a)
	(a) (a) \$0,001 (a) (a) (a) (a) (a) (a) (a) (a) (a)		.034		b \$0.0 b.1 .0 b.0 (a) (a) (a) (a)
	(a) (a) \$0,001 (a) (a) (a) (a) (a) (a) (a) (a) (a)		.034		b \$0.0 b.1 .0 b.0 (a) (a) (a) (a)
	\$0.001 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)				(a) (a) (a) (a) (a)
	(a) (a) (a) (a) (a) (a) (a) (a) (a) (a)				(a) (a) (a) (a) (a)
	(a) (a) (a) (a) (a) (a) (a) (a) (a)	.002			(a) (a) (a) (a)
	(a) (a) (a) (a) (a) (a) (a) (a)				(a) (a) (a)
	(a) (a) (a) (a) (a) (a) (a)			_039	(a) (a)
	(a) (a) (a) (a) (a) (a)			.039	(a)
	(a) (a) (a) (a) (a) (a)			.039	(a)
	(a) (a) (a) (a) (a)			.039	(a)
	(a) (a) (a) (a)			. 039	
	(a) (a) (a)	***************************************		the second second	b. (
	(a) (a)	**********	100000000000000000000000000000000000000		(a)
	(a)	0.000.000.000.000.000			(a)
				.009	b.1
				.062	6.0
	(a) (a)			.004	(a)
	(a)			. 035	8.0
	(a)			. 000	(a)
	(a)				(a)
	(a)	.021			b.(
	(a)				(a)
	(a)	, 026			b. (
	(a)				(a)
	(a)			.075	b.1
***************************************	(a)			. 040	6.0
	(a)				(a)
	(a)				(a)
	(a)				(a)
	(a)	**********			(a)
	(a)	***********		**********	(a)
	(a)				(a)
	(a)				(a)
	(a)			.050	b.
*******************************	(a)	**********			(a)
*****************************	(a)			**********	(a)
	(a)	**********		*********	(a)
	(a)	*********	**********		(0)
	(a)	***********	**********	**********	(a)
	(a)			. 207	b.:
	(a)		120	. 301	0.
***************************************	(a)	.002	. 136	. 056	b.
	(a) (a)	.002	.005	. 101	b.
	(a)		***************************************	.020	b.
	(a)	. 030		.063	b.
	(a)		. 050	. 150	b.:
	(a)		. 040	. 150	b.
······	(4)			.017	6.1
	(a)	.022		. 020	b.
	(a)				(a)
	(4)			. 151	b.
	(a)				(a)
	(a)			.160	b.
	(a)			***********	(a)
	(a)			. 100	6.1
***************************************	(a)			. 065	8.1
	(a)	. 002	.000	.169	b.:
	(a)			.200	8.3
	(a)			. 120	b.
	(a)	.021		, 050	6.0
	(a)	. 207	. 207	.117	b.
	(a)			.004	0.0
	(a)	.012	.044	.072	b. 1
	(a)	**********	**********	. 080	b

s Not reported.

b Not including insurance.

MARKERY ST.

TABLE VIII.—COST OF PRODUCTION OF BITUMINOUS COAL AT VARIOUS MINES IN VARIOUS STATES—Continued.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN OWE TON OF 2,000 POUNDS—Continued.

[Establishments numbers 1 to 148 are in the United States; numbers 147 to 151 are in the Deminion of Canada; numbers 133 to 160 are on the continent of Europe, and numbers 161 to 173 are in Great Britain.]

w 10	Additional cost per ton.						
Establishment number.	Insurance.	Interest	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
7	(a)	Sacri	James J	\$0, 100	b 80. 10		
8	(a)		\$0,056	. 000	6.1		
9	(a)	\$0,003	.106	.072	b. 1		
0	(a)	. 026		.100	b. 1		
i	(a)	.064			6.0		
	(a)			.104	8.1		
	\$0.013	.064		.064	.1		
	(a)			,080	b.0		
	(a)	*********	. 003	. 075	8.0		
	(a)	.001	.028	.060	8.0		
	(a)	.040	**********	.024	6.0		
	(a)	************	.040	.150	6.1		
	(4)				(a)		
	(a)				(a)		
	(a)	samment.			(a)		
	(a)				(a)		
l	(a) (a)				(a)		
					(a)		
	(a)						
	(a) (a)			. 093	b.00		
	(a)			.000	(a)		
	(a)			. 100	b. 10		
	(4)				(a)		
	(a)			, 060	8.00		
	(a)				(a)		
	(a)	C	.030	.015	b. 04		
	(a)		000000000000000000000000000000000000000	. 101	8.10		
	(a)		.012	. 134	b. 14		
	(a)	. 123	.012	. 130	b. 26		
	(a)	(a)		. 359	c. 08		
	(a)		.012	. 134	b. 14		
	(a)	.017	. 015	. 045	b. 07		
	(a)	.030		.100	b.13		
	(a)		. 100	.070	b. 17		
	(a)				(a)		
	(a)	.016		.090	b. 10		
	(a)		.051	, 089	b.1		
	(a)		. 022	.107	b. 1:		
	(a)		. 022	,107	b.13		
	(a)	. 006	. 025	.078	b. 10		
	(a)		.012	**********	6.0		
	(a)	**********	.013	. 107	b. 1:		
	(a)	**********	.012	. 107	b.11		
	(4)	. 030		, 100	b.13		
	(a)	.015		. 135	b. 1.		
	(a)	-021		.112	b. 13		
	(a)	-019		. 116	b. 13		
	(4)	. 020		. 080	8.10		
	(a)	********			(a)		
	(a)				(a)		
	(4)	************		. 105	(a) 0.10		
	(a)			.110			
***************************************	(4)			100	(a)		
	(a)			100	(a)		
	(a)				(a)		
	(a)				(a)		
	(a)	.015			4.0		
	(a)	(a)	(a)	. 071	d.0		
	(a)				(a)		
	(4)				(4)		
	(a)			.100	8.1		
	(4)				(a)		
	(a)				(a)		

³ Not including insurance.

Sold including insurance and interest.

d Not including insurance, interest, and depreciation of value of plant.

H.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,000 POUNDS-Concluded.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 153 to 160 are on the continent of Europe, and numbers 151 to 173 are in Great Britain.]

•		. Addi	tional cost pe	er ton.	
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.
13	(a)	80, 021			b \$0. 0
3	(4)	030	80, 042	20,030	b.
4	(a)	.000	. 050	. 038	b .0
5	(4)			. 000	(s) · ·
5	(a)			.083	6.0
7	(4)	.009		.063	8.0
		.009		.063	
	(a)	.003	. 025		(a) b.:
9	(a)		. 025	. 003	
	(4)	· · · · · · · · · · · · · · · · · · ·			(a)
<u> </u>	(a)	(a)	(a)	. 071	ę. (
2	(a)	· · · · · · · · · · · · · · · · · · ·	. 020	. 050	b. (
} 	(4)			. 125	b .1
<u> </u>	(a)			•••••	(a)
5	(a)				(a)
	(a)				(a)
7	(4)				(a)
8	(a)				(a)
9	\$0.002	. 034			. (
0	.003	. 007			. (
l	. 007	.011			. (
2	(a)	. 057	. 053		b. 1
3	(a)	. 			(a)
ł	(a)				(a)
5	(a)				(4)
G	(a)	. 053	.070		` b.:
7	(a)	l	. 020		b.(
8	(a)		.078	. 007	b.(
0	(a)		l		(a)
0	(a)	. 036	. 034		` b.(
l	(a)		İ	. 127	. b.1
}	(a)			. 127	b. 1
3	(a)			.127	b.
	(a)			.127	b.)
5	(a)			. 139	b.
B	(6)		. 065	.112	- b.i
7	(6)	.004	.068	.091	b.1
8	(4)	l	. 023	.118	b .3
)	(6)		. 023	. 163	b .i
o	(a)		. 023	131	.
·	(4)			.109	b .:
2	(6)	(a)	(a)	. 136	6.1
ő	(6)	(",	(6)	127	5 .5
<i>,</i>	(=/	l	1		•

<sup>a Not reported.
b Not including insurance.
c Not including insurance, interest, and depreciation of value of plant.</sup>

From the above there have been drawn five subsidiary tables showing summaries of cost of bituminous coal in various countries. They cover averages drawn from forty-seven establishments in the United States for run of mine, from ninety-nine establishments in the United States for lump bituminous coal, from five establishments in the Dominion of Canada for run of mine, from thirteen establishments in Great Britain for run of mine, and from nine establishments on the continent of Europe for run of mine. The average cost per ton, as derived from these establishments, for each district is as follows: In the United States for run of mine, 72.8 cents, with an additional theoretical cost of 5.2 cents; for lump bituminous coal in the United States, 92.5 cents, with an additional theoretical cost of 6 cents; in the Dominion of Canada for run of mine, \$1.044, the additional theoretical cost being 2.2 cents; in Great Britain for run of mine, \$1.004, with a possible additional theoretical cost of 14.6 cents; on the continent of Europe for run of mine, the average cost is 67.2 cents per ton, with an additional theoretical cost of 4.9 cents. The tables showing these summaries are the five following:

SUMMARY OF COST OF BITUMINOUS COAL (RUN OF MINE) IN FORTY-SEVEN ESTABLISHMENTS IN THE UNITED STATES.

[This summary is drawn from sub-tables A to H immediately preceding. The establishments covered are numbers 1 to 6, inclusive, 10, 12, 28, 35 to 39, inclusive, 76, 66, 87, 90, 92, 94, 95, 97 to 100, inclusive, 103 to 106, inclusive, 108 to 115, inclusive, 128, 137, and 140 to 146, inclusive, being all the bituminous coal mines in the United States giving their product as run of mine from which reports were obtained. As may be seen the periods covered are usually twelve months and are in the years 1888, 1889, and 1890. By run of mine is meant all the coal mined of whatever size.]

	Tons of 2,000 pounds.		
Elements of cost.	Cost of 7,446,253.	Average cost of one.	
Labor. Officials and olerks.	\$4, 826, 053 129, 367	\$0. 648 . 017	
Timber	104.098	.015 .042 .006	
Total	5, 418, 012	. 728	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[One establishment gave the amount paid for insurance, which is the sum credited to this item below. For forty-six the agents of the Department falled to obtain a statement. Thirteen establishments gave the amount paid for interest; the aggregate of these makes the sum below. Thirty-one reported that there was no expenditure for interest, and for three no statement was obtained. Four-teen establishments gave the amount charged to depreciation; the aggregate of these makes the aum below. Thirty-one reported that nothing was charged to this item, and for two no statement was obtained. Twenty-seven establishments gave the amount paid as royalty to the owners of the soil; the aggregate of these makes the sum below. Nineteen reported that nothing was paid as royalty. The sums entered in the first column below are, of course, apportioned in the second column among the whole forty-seven establishments.]

Insurance Interest Depreciation of value of plant Royalty paid to owners of the soil	71, 292	\$0,000 .010 .006 .036
Total	387, 364	. 052

SUMMARY OF COST OF BITUMINOUS COAL (LUMP) IN NINETY-NINE ESTABLISH-MENTS IN THE UNITED STATES.

[This summary is drawn from the preceding sub-tables A to H. The establishments covered are numbers 7 to 9, inclusive, 11, 13 to 25, inclusive, 27 to 34, inclusive, 40 to 75, inclusive, 77 to 85, inclusive, 88, 89, 91, 93, 96, 101, 102, 107, 116 to 123, inclusive, 127 to 132, inclusive, 134 to 136, inclusive, 138 and 139, being all the bituminous coal mines in the United States giving their product as lump from which reports were obtained. As may be seen the periods covered are usually twelve months and are in the years 1888, 1889, and 1890. By lump coal is meant all coal which is large enough to pass over the screens used.]

	Tons of 2,000 pounds.		
Elements of cost.	Cont of 5,563,547.	Average cost of one.	
Labor. Officials and clerks. Timber.	232, 756 146, 484	\$0.933 .012 .026	
Other supplies and repairs	277, 320 40, 273	. 05 0 . 007	
Gross total	5, 887, 461 740, 62 4	1. 058 . 133	
Net total	5, 146, 837	. 925	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

One establishment gave the amount paid for insurance, which makes the sum credited to this item below. For ninety-eight the agents of the Department failed to obtain a statement. Twenty establishments gave the amount paid for interest; the aggregate of these makes the sum below. Seventy-nine reported that there was no expenditure for interest. Seventeen teablishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Eighty-two reported that nothing was charged to this item. Fifty-two establishments gave the amount paid as royalty to the owners of the soil; the aggregate of these makes the sum below. Forty-seven reported that nothing was paid as royalty. The sums entered in the first column below are, of course, apportioned in the second column among the whole ninety-nine establishments.

Insurance Interest Depreciation of value of plant Itoyalty paid to owners of the soil.	43, 962 50, 455	\$0. 000 . 008 . 009 . 043
Total	334, 973	. 060

SUMMARY OF COST OF BITUMINOUS COAL (RUN OF MINE) IN FIVE ESTABLISH-MENTS IN THE DOMINION OF CANADA.

[This summary is drawn from the preceding sub-tables A to H, though the figures of cost are there omitted and the notation made "not reported" simply to prevent indentification of individual establishments. The establishments covered are numbers 147 to 151 indusive, being all the bituminous coal mines in the Dominion of Canada from which reports were obtained. As may be seen, the period covered in each case is the calendar year 1889. By run of mine is meant all the coal mined of whatever size.]

	Tons of 2,000 pounds.		
Elements of cost.	Cost of 893,032.	Average cost of one.	
Labor. Officials and clerks.	\$751, 730 22, 456	\$0.842 .025	
Timber	24, 506	.025	
(Ather supplies and repairs	55, 248	.062	
Total	982, 569	1.044	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Three establishments gave the amount paid for insurance: the aggregates of these make the sum credited to this item below. For two the agents of the Department failed to obtained a statement. Three establishments gave the amount paid for interest; the aggregate of these make the sum below. Two reported that there was no expenditure for interest. All five establishments reported that nothing was charged to depreciation and that nothing was paid as royalty to the owners of the soil. The aggregates entered in the first column below are, of course, apportioned in the second column among the whole five establishments.]

Insurance	
Depreciation of value of plant	
Total	

a Including royalty paid to the state.

II. Ex. 265-15

F.-PER CENT: OF EACH ELEMENT OF COST IN ONE TON OF 2,000 POUNDS.-Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. This table is based on the preceding one, neglecting the last two columns; to avoid duplicating the notes, which would be the same in substance, they are here omitted and the reader is referred to that table for such information as they furnish. The reason for neglecting the column of deductions for value of screenings in a table of percentages is obvious.]

Es- tab- lish-		Labor.		Officials and	Supplies ar	d repairs.		
ment	Minera.	Other.	Total.		Timber.	Other.	Taxes.	Total.
66 67 70 70 70 70 70 70 70 70 70 70 70 70 70	71. 80 47. 41 59. 09 68. 46 61. 38 48. 67 42. 40 61. 18 67. 49 48. 267 70. 96 61. 15 63. 45 67. 06 67. 72 68. 64 66. 06 65. 75. 89 65. 01 65. 03 65.	17. 80 22. 00 22. 80 22. 80 22. 80 25. 12 29. 95 43. 58 43. 58 19. 18 33. 16 21. 32 22. 77 22. 33 23. 37 22. 37 22. 71 11. 54 22. 72 19. 30 20. 99 22. 74 25. 14 23. 70 25. 15 6. 88 16. 80 27. 90 25. 25 16. 28 16. 80 27. 90 25. 25 16. 88 16. 80 27. 90 25. 25 16. 88 16. 80 17. 98 18. 67 15. 83 17. 56 28. 08 28. 08 29. 10 29. 58	89. 60 92. 99 79. 43 88. 09 89. 26 86. 50 78. 82 85. 98 86. 67 81. 48 83. 93 92. 88 78. 64 88. 78 88. 10 90. 10	clerks. 3. 27 2. 51 1. 72 3. 58 9. 50 2. 43 1. 36 5. 02 2. 77 1. 36 5. 02 2. 77 1. 36 5. 02 2. 77 1. 78 1. 21 1. 70 6. 52 1.	3. 01 1.46 3.79 2.18 1.53 2.26 2.19 4.86 1.83 1.73 1.99 2.15 5.05 5.05 5.05 1.70 1.75 8.89 4.90 1.91 2.76 2.78 4.90 1.91 2.78 4.90 1.91 2.78 3.05 2.22 4.52 2.22 4.52 2.22 4.52 2.22 4.52 2.30 3.05 2.09 1.33 3.70 1.64 3.61 3.61 3.68 2.95 1.20 3.06 3.66 3.40 3.61 3.66 3.40 3.61 3.66 3.40 3.61 3.66 3.40 3.56 3.56 3.66 3.40 3.56 3.66 3.40 3.56 3.66 3.66 3.66 3.66 3.66 3.66 3.66	4.04 2.918 3.746 5.14.27 5.14.27 5.14.27 5.177 6.35 6.377 6.35 6.377 6.35 6.377 6.35 6.377	.08 .13 .15 .09 .41 .123 .10 .12 .10 .11 .123 .10 .12 .10 .11 .123 .10 .12 .185 .20 .239 .11 .144 .25 .25 .27 .185 .30 .245 .166 .67 .104 .79 .288 .88 .48 .48 .48 .48 .48 .48 .48 .48 .	100 100 100 100 100 100 100 100 100 100
125 126 127 128 129 130 131	75, 26 52, 89 76, 68 80, 86 76, 68 63, 31 68, 90	13.50 19.74 13.87 14.23 15.44 23.16 21.26	88, 76 72, 63 90, 55 93, 09 92, 12 86, 47 90, 16	4, 21 6, 32 2, 68 , 82 4, 20 10, 15 3, 74	4, 23 7, 89 3, 36 1, 12 , 74 1, 21 2, 26	2,06 13,16 1,99 2,66 2,73 1,91 2,66	. 42 . 31 . 21 . 26 L 18	10 10 10 10 10 10



F.—PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,000 POUNDS—Concluded.

(Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain. This table is based on the preceding one, neglecting the last two columns; to avoid duplicating the notes, which would be the same in substance, they are here omitted, and the reader is referred to that table for such information as they furnish. The reason for neglecting the column of deductions for value of screenings in a table of percentages is obvious.

Es- tab- lish	Labor.			Officials _	Supplies and repairs.			
ment num- ber.	Miners.	Other.	Total.	and clerks.	Timber.	Other.	Taxee.	Total.
132 133	72. 64 63. 22	15. 02 17. 68	87. 66 82. 90	8. 88 8. 26	3.08	4. 88 7. 25	. 50 1, 59	100
134			88, 14	4.56	8.18	8. 59	. 53	100
135	64, 32	19.82	84. 14	12.51	.88	1.94	. 53	100
136	50. 81	26.75	77. 56	2. 88	5. 18	14. 83		100
137 138	69. 15 69. 33	25. 89 17. 28	95. 04 86. 61	2, 33 8, 26	1.86 1.71	. 77 2. 85		100
139	00.33	11.20	91. 28	2.35	2.35	3. 91	.57	100
140	47. 36	43, 98	91, 34	2.50	2.98	2. 91	11 .11	100 100
141	63, 57	27. 89	91. 46	1.14		7.40		100
142	67, 48	17.81	85, 29	5. 67	2.70	6. 07	.27	100
143	56, 62	22, 98	81.60	11.02	I. 17	6. 21	l	100
144	77.24	14, 31	91.55	1.55	1.90	8. 97	1.03	100
145	58.75	27. 97	86. 72	2, 70	8.41	5, 99	1.18	100
146	58.00	20.65	78. 65	4.06	7. 19	9. 75	.35	100
147	32.40	43.46	75, 86	2. 83	4.73	11.08	5. 50	100
148	33. 89	48. 32	82. 21	3. 26	2.74	5. 26	6.53	100
149	89. 33	42.37	81.70	1.16	2.31	8. 73	6. 10	100
150 151	33. 24 42. 71	45. 67 41. 21	78. 91 83. 92	4. 20 4. 09	1. 34 3. 02	9. 47 4. 59	6.08	100
152	94,71	31.21	M9. 57	2 91	16.67	8. 84	4. 38 2. 01	100
153			69. 47	6. 20	14.31	8.91	1.11	100 100
154			68. 82	5. 46	16. 32	8. 22	l i. iš l	100
155			71. 05	3.97	12. 22	11.36	1.40	100
156	25.01	52.94	77. 98	1. 99	11.69	7. 15	1.19	100
157	25.74	34. 26	60.00	2.77	18.51	11.49	7. 23	100
158	28, 85	40. 97	69. 82	3. 75	8.59	11.45	6, 39	100
159	34. 59	36. 49	71.08	. 81	7.03	15. 77	5.31	100
160	65, 48	8.40	73. 88	1. 12	11. 57	8. 02	5.41	160
161			73.42	8. 63	9. 78	11. 12	2.05	100
162		• • • • • • • • • • • • • • • • • • • •	74. 38	3. 58	10. 05	9.97	2.03	100
163			71.48 71.89	3. 04 3. 79	10. 79	12.97	1.72	100
164 165			72.50	3.79 1.77	11.54	10. 64 15. 00	2. 14 2. 29	100
166	54, 69	21.92	76.61	2.94	8, 44 4, 52	12. 20	3, 73	100 100
167	54, 58	21. 32	74.34	4. 01	4.54	14.79	2.32	100
168	47. 53	32. 85	80.38	3. 83	6.94	6.75	2 10	100
169		32.00	80. 34	4.89	4.43	7. 73	2 61	100
170	50.71	31.50	82. 21	3, 95	4. 83	0.81	2.20	163
171			86, 55	. 73	6, 26	6. 46		100
172	41. 42	41.02	82. 44	3. 59	4. 49	9. 48		100
173			79. 63	2, 94	5. 87	9, 54	2, 02	100

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G .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS-Continued.

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe; and numbers 161 to 173 are in Great Britain.]

	Additional cost.					
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.	
68	(a)		\$2, 089	\$3, 333	b \$5, 42	
69	(a)	\$168	5,000	3,600	68,76	
70	(a)	605		2, 325	b 2, 93	
71	(a)	2, 716		1.322.7222.	62 71	
72	(a)			2, 198	b 2, 71 b 2, 19	
73	\$120	597		589	1, 30	
74	(a)			2,017	b 2, 01	
75	(a)	40	1,000	24, 907	b 25, 90	
76	(a)	40	1,000		b 3, 20	
77	(a)	17, 441		2, 160 10, 217	b 27, 60	
78	(a)		870	3, 263	b 4, 13	
79	(a)				(a)	
80	(a)				(a)	
81	(a)				(a)	
82	(a)				(a)	
83	(a)				(a)	
4	(a)				(a)	
85	(a)				. (a)	
86	(a)				(a)	
87	(a)			625	b 62	
88	(a)				(a)	
89	(a)			1, 898	b1.8	
00	(a)				(a)	
01	(a)			1,400	61,4	
2	(a)				(a)	
3	(a)		1, 286	646	61,9	
H	(a)			8, 158	68,1	
15	(a)	27311011101	792	9, 138	89.9	
6	(a)	8, 563	815	9, 013	b 18, 3	
7	(a)	(a)	A CONTRACTOR STATE	15, 110	c 15, 1	
98	(a)		1,037	11, 964	b 13, 00	
9	(a)	900	800	2, 410	b4, 1	
00	(a)	1, 192		3, 972	b 5, 10	
01	(a)		7, 500	5, 250	b 12, 7	
02	(a)				(a)	
03	(a)	1,000		5, 473	06,4	
14	(a)		3,000	5, 209	68,20	
15	(a)		7,063	33, 904	b 40, 9	
6	(a)		5, 083	24, 590	b 29, 6	
07	(a)	204	1.088	3, 379	64.7	
08	(a)		2, 156		b 2, 1	
9	(a)		3, 171	27, 126	b 30, 25	
0	(a)		2, 250	20, 772	b 20, 0	
1	(a)	1,808		6,028	b7. 8	
2	(a)	1,500		13, 830	b 15, 3	
3	(a)	800		4, 197	b 4, 99	
4	(a)	600		3, 584	b 4, 18	
5	(a)	750		3,066	b 3, 8	
6	(a)				(a)	
7	(a)				(a)	
8	(a)				(a)	
9	(a)			4, 287	64, 2	
	(a)			***********	(4)	
1	(a)			3, 471	63.4	
m	(a)				(a)	
3	(a)			***************************************	(a)	
4	(a)		*********		(a)	
5	(a)	1, 789	(a)	712	b 1, 78	
26	(a)	(a)	(a)	712	d 71	
27	(a)			***********	(a)	
28	(a)				(a)	
29	(a)			2, 483	b 2, 48	
30	(a)				(a)	
31	(a)				(a)	
32	(a)	1, 215	2, 500		b 1, 21	
33	(a)	1, 800	9 500	5, 321	b 9, 6:	

Not reported.
 Not including insurance.
 Not including insurance and interest.
 Not including insurance, interest, and depreciation of value of plant.

TAME VIII, THE OF PRODUCTION OF BITCHINGES COAL AT VARIOUS MINES IN VARIOUS STATES—Continued.

45, -ADDITIONAL COOF OF CERTAIN TRIBORETICAL ELEMENTS-Concluded.

	Additional cost.					
Hetaldiahment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total	
	(4)	\$864	84, 914	83, 729	è 89, 50	
	(a)				(a)	
20/272 3 277 27/07/2007/07/07/07/07/07/07/07	(4)	**********		461	b 40	
	(4)	240		1,664	b 1, 90	
come - vin minimum	(4)				(a)	
CHARLE SERVICE LESS COMPANIES	(a)	250	1,809	6,715	58,77	
	(a)				(4)	
	(a)	(a)	(a)	54, 254	c 54, 2	
365 - 300000000000000000000000000000000000	lai		710	1,775	624	
7:11 17:411F7141FF4744F44	(4)			669	b 6	
***** ********************************	(4)				(4)	
THE CHIMINITON OF THE OWN	(4)				(a)	
7471 - 11114140 YARRAMARKANANANA	(a)				(a)	
*** : : : : : : : : : : : : : : : : : :	(a)	(a)	(a)	(a)	(a)	
THE CONTRACTOR OF THE PARTY OF	(a)	(0)	(a)	(a)	(a)	
C THE SEC SECURITION OF THE PROPERTY OF THE	(a)	(4)	(a)	(a)	(4)	
EL SERVICE COMPONENTIAL	100	(a)	(a)	(a)	(4)	
SHEET & STREETH CONTROLLER	(4)	(a)	(a)	(a)	(a)	
The averse an academic	(a)	13, 785	12, 608		b 26, 3	
The state of the s	(a)				(a)	
The state of the s	(a)				(a)	
C TOTAL CONTRACTOR CONTRACTOR	(a)				(a)	
The second representations	(a)	945	1, 239		b 2, 1	
	(a)		13, 705		b 13, 7	
112 1124 1124 1144 1144 1144	(4)		32, 634	2, 837	4 35, 4	
	(a)				(a)	
1 - 11/1/4 - 11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/	(4)	3, 490	3, 332		b 6, 8	
	(4)	*********		5, 542	65,5	
THE PROPERTY AND	(4:			9, 109	b 9, 1	
V 111 75 000 00 00000	(4)	*********		3, 899	b3, P	
20, 1100 000	1401			7,718	67.7	
A	(4)	SECURIOR STATE		63, 586	863, 5	
1 Introductions	1403		54, 758	94, 021	b 148, 7	
	(m)	603	10, 171	13, 477	624.2	
14 C 4 4 6	(thi)	*******		5, 817	46,9	
7 - 10 7 9 4 4	(4)	SHIPPING SE	1, 816	12,868	b14, 6	
111		******* **	3, 444	19, 663	6 23, 1	
F 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		A1 . 55 55		18, 282	9142	
11 1431 1	140	(4)	1.01	5, 124	e 5, 1	
1 155 1611 183	1941	********	*******	141, 50	b 141, 2	

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O tur injurish membense minished and depressions it raise of piant.

H.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,000 POUNDS,

[Establishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 152 to 160 are on the continent of Europe, and numbers 161 to 173 are in Great Britain.]

	Additional cost per ton.							
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.			
1	(a)				(a)			
9	(a)		\$0.050	\$0,045	ò \$0.0			
3	(a)	\$0.116			b.1			
·	\$0,001	.002	. 034		6.0			
	(a)	.002	***************************************		6.0			
	(a)				(a)			
	(a)	***********	**********		(a)			
	(a)	***********		***********	(a)			
	(a)			**********	(a)			
· · · · · · · · · · · · · · · · · · ·	(a)				(a)			
	(a)	**********	**********	, 039	b. 0			
	(a) (a)				(a)			
	(a)	***********			(a)			
	(a)			.009	b.(
	(a)			.062	b.(
	(a)			2002	(a)			
	(a)			. 035	6.0			
	(a)				(a)			
	(a)				(a)			
	(a)	. 021			6.0			
***************************************	(a)				(a)			
	(a)	. 026			b.1			
	(a)				(a)			
	(a)			.075	6.			
	(a)	**********		. 040	b.			
	(a)	**********			(a)			
	(a)		**********		(a)			
	(a)		**********		(a)			
	(a)	*********	***********		(a)			
	(a)	********	**********		(a)			
***************************************	(a)	**********	***********	**********	(a)			
	(a)	*********	**********	*********	(a)			
	(a)			. 050	6.			
	(a)	**********			(a)			
	(a)	********		*********	(a)			
	(4)	*********	**********	**********	(a)			
	(a)				(a)			
	(a) (a)			. 207	(a)			
	(a)			.301	b.			
	(a)		. 136	, 056	b.:			
	(a)	.002	. 005	. 101	b.			
	(a)		. 000	.030	b.			
	(a)			. 020	b.			
	(a)	. 030		. 063	b .			
********	(a)		, 050	. 150	b.			
	(a)		.040	. 150	b.			
	(a)			.017	b.			
	(a)	.022		.000	b.			
	(a)		diam'n.		(a)			
	(a)			.151	6.			
	(a)	********	***********	**********	(a)			
	(a)	***********	**********	.160	b.			
	(a)		*********		(a)			
· · · · · · · · · · · · · · · · · · ·	(a)			. 100	b.			
	(a)	**********	**********	. 065	b.			
	(a)	.002	. 090	. 169	b.:			
	(a)			.200	0.			
	(a)	.021		. 120	b.			
	(4)	.207	. 207	.117	b.:			
	(a)	. 207	. 207	.004	b.			
	(a) (a)	.012	.044	.072	b.			
	(4)	.012	.041	.080	8.0			
	/ test			. 150	b.:			

s Not reported.

b Not including insurance.

222 REPORT OF THE COMMISSIONER OF LABOR.

TABLE VIII.—COST OF PRODUCTION OF BITUMINOUS COAL AT VARIOUS MINES IN VARIOUS STATES—Continued.

The Control of Burn

Eg.—Additional cost of certain theoretical elements in one ton of 2,000 pounds—Continued.

[Ratablishments numbers 1 to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 133 to 160 are on the continent of Europe, and numbers 161 to 173 are in Great Britain.]

		Additional cost per ton.							
Establi	shwent number.	Insurance.	Interest	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.			
		(a)	Contraction in		\$0, 100	b 80. 1			
10		(a)		\$0.056	.000	6.1			
		(a)	\$0,003	, 10G	.072	b. 1			
0		(a)	. 026		.100	b. 1			
· maniferior		(a)	, 064			b.0			
	****************	(4)			.104	6.1			
	***********	\$0,013	.064	**********	, 064	.1			
		(a)	*********		.080	8.0			
		(a)	**********	. 003	. 075	6.0			
d accountry		(46)	.001	. 028	.000	6.0			
	*********************	(4)	. 040		.024	6.0			
4		(a)		. 040	.150	6.1			
		(4)	*******			(a)			
d acce 100	Accessors to the control of the cont	(a)				(a)			
C 111	and the second	(0)				(a)			
		(a) (a)				(a)			
A						(4)			
1111		(a)				(a)			
		(0)				(a)			
		(0)	**********		. 093	b. 00			
		(a)				(a)			
		(a)			. 100	6.10			
		(4)				(a)			
		(a)		**********	. 060	8.00			
1	241 741 741	(4)	*********	*********	*********	(a)			
4		(4)	· · · · · · · · · · · · · · · · · · ·	.030	.015	b.04			
i	11	(4)	********		.101	b. 10			
4	-1010	(0)	*********	. 012	.134	b. 14			
il a		(40)	, 123	.012	. 130	6.26			
		140	(4)	.012	.134	b. 14			
4	41991	(uk)	.017	.015	.045	8.07			
	*	(4)	0.0		.100	b.13			
		(4)	. 000	. 100	.070	b. 17			
1	- 1 T 1 T 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A	(40)		100000		(a)			
1		(4)	.016		.000	b. 10			
A.	7.5	1483		, 051	. 089	6.10			
	4 133	(4)		.022	.107	b. 12			
		(4)	innian	. 0.25	.107	8.13			
li.	4.5	141	000	, 025	.078	b. 10			
1	2.6	1981	**********	.012	**********	6.0			
		(4)	********		. 107	b. 12			
7		141		.012	. 107	b. 11			
		(8)	. 030		. 100	b. 12			
		141	.013		. 135	6.13			
r .		2 40 7	.021		.112	b. 13			
		1787	.0.0		.080	b. 13 b. 10			
4		140)	0.0	**********	,000	(4)			
Ŷ.		1067	harmon com	*********		(4)			
		(4)	•••			(a)			
4		(40)	*****		105	٠. 10			
Ì		(4)				(a)			
,		(4)			. 100	· . 1			
١		1.41	**********			(4)			
}		140	*****			(a)			
!		, ,				(6)			
•		1401	913			6.0			
ł		(4)	(40)	(a)	. 071	4.0			
†		1.00				(a)			
7		'W'		· · · · · · · · · · · · · · · · · · ·	.100	(a) 8.1			
ł		141		ļ	100				
ľ		1.01	*********	l		(e) (e)			
.		140		• • • • • • • • • • • • • • • • • • • •		7			

May lating the lack and any passes

· in

4 Not including incurence, interest, and depremeture of release of plant.

H.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,000 POUNDS-Concluded.

[Establishments numbers I to 146 are in the United States; numbers 147 to 151 are in the Dominion of Canada; numbers 153 to 160 are on the continent of Europe, and numbers 161 to 173 are in Great Britain.]

• .	Additional cost per ton.						
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
33	(0)	\$0,021			1.00.00		
	(a)		80.042	80.050	b ş 0. 0		
33	(a) (a)	.030	050		ъ. (ъ. 0		
35	(4)		.000	. 038	(4)		
36	(a)			.083	ر <u>ت</u>) 6.01		
37	(4)	.009		.063	b.07		
38	(a)			.003			
19	(4)	.003	. 025	. 003	(6) b .1:		
LO	(4)			. 003	(a)		
il	(a)	(a)	(a)	.071	(E) c.0		
2	(4)	(۵)	(2,020	.050	b. 0		
3	(4)	·····		. 125	b. 1		
4	(a)						
5	(4)				(4) (4)		
6	(6)				(4)		
7	(4)				(4)		
'	(4)				(e)		
9	80, 002	. 034	•••••	••••••	(4)		
0	. 003	.007		••••••	.0		
l	.007	l išii		•••••	.0		
2	(e)	.057	. 053	•••••	3 .1		
5	(4)	.007	.053	•••••			
·	(a)			•••••	(a)		
5	(4)			••••••	(a)		
g	(6)	. 053	.070	•••••	(a) b .1		
7	(a)	.000	020	•••••	\$. o		
	(4)		.078	. 007	\$.ŏ		
9	(4)		.010	.007	(4)		
D	(a)	. 036	.034	••••••	`δ.0		
l	(G)	.030		.127			
2	(a)			127	5. i		
·	(4)			127	5.i		
·	(a)	•••••		127	5.i		
5	(4)	•••••		. 139	5. i		
5	(a)		. 065	.112	- 5.1		
7	(4)	.004	.068	.091	• i		
f	(4)		.023	.118	5 .1		
S	[]		.023	.163	5.i		
0	(a)		.023	. 131	5.i		
1	(4)			.109	5.i		
1	(4)	(a)	(4)	. 136	6.1		
ź	(6)	(4)	(a)	. 136	5.1		
9	(-)			. 141	w. 1		

<sup>Not reported.
Not including insurance.
Not including insurance, interest, and depreciation of value of plant.</sup>

TABLE IX.—COST OF PRODUCTION OF COKE AT VARIOUS OVENS IN VARIOUS STATES—Continued.

B.—CHEMICAL ANALYSIS OF COKE (PER CENT.)

[Establishments numbers 1 to 30 are in the United States; numbers 31 to 40 are on the continent of Europe; and numbers 41 to 45 are in Great Britain.]

Establishment number.	Water.	Volatile combusti- ble matter.	Fixed carbon.	Sulphur.	Asb.
·	. 180	. 640	89, 164	. 670	9, 346
,	(a)	(a)	(a)	(a)	(a)
3	. 080	1.110	90, 480	. 830	7, 500
4	. 680	2, 500	80, 910	1, 940	13, 970
	. 500	1, 000	88, 900	Trace.	9, 600
6	, 250	2.050	85, 110	(b)	12, 500
7	.760	2, 460	83, 220	(e)	13, 560
8	(a)	(a)	(a)	(a)	(a)
9	1,540	2,270	83, 670	1. 180	11. 340
0	. 130	1.210	87, 690	1. 070	9, 900
1	(a)	(a)	(a)	(a)	(a)
2	(a)	(a)	(a)	(a)	(a)
3	(a)	(a)	(a)	(a)	(a)
	(a)	(4)	(a)	(a)	
5	(a)	(a)	(a)	(a)	(a)
I			4		(a)
	(a)	(a)	(a)	(a)	(a)
7	(a)	(a)	(a)	(a)	(a)
	(a)	(a)	(a)	(a)	(a)
9	(a)	(a)	(a)	(a)	(a)
9	(a)	(a)	(a)	(a)	(a)
1	**********	1. 260	90.380	(d)	8. 360
2	(a)	(a)	(a)	(a)	(a)
3	(a)	(a)	(a)	(a)	(a)
4	. 280	1.380	77. 530	1.000	19.810
5	.950	.460	87, 220	. 760	10, 610
6	**********		94. 560	. 790	4. 650
7	. 345	.341	92, 694	. 738	5, 88,
8	. 290	. 140	96, 141	. 569	2. 860
9	(a)	(a)	(a)	(a)	(a)
0	. 860	1. 440	89, 800	(e)	e 7. 900
1	5. 000	2.000	79, 000	. 500	13, 500
2	(a)	(a)	(a)	(a)	(a)
3	(a)	(a)	(a)	(a)	(a)
4	4. 000		83, 950	. 550	11. 500
5	**********	2.000	87, 500	Trace.	10.500
6	6. 500	1.500	80,000	. 800	11. 200
7	(a)	(a)	(a)	(a)	(a)
8	(a)	(a)	(a)	(a)	(a)
9	(a)	(a)	(a)	(a)	(a)
0	(a)	(a)	(a)	(a)	(a)
1			90.050	. 820	9. 130
2	3. 400	. 500	86, 800	. 900	8, 400
3	1,700		89. 900	. 750	7. 650
4	(a)	(a)	(a)	(a)	(a)
5	(a)	(a)	(a)	(a)	(a)

<sup>Not reported.
Sulphur, by separate determination, 1.650.
Enlphur, by separate determination, 1.460.</sup>

d Sulphur, by separate determination, 0.606. Sulphur included with ash.

TABLE IX.—COST OF PRODUCTION OF COKE AT VARIOUS OVENS IN VARIOUS STATES—Continued.

C .- GENERAL STATEMENT OF COST FOR THE PERIOD.

[Batablishments numbers 1 to 30 are in the United States; numbers 31 to 40 are on the continent of Europe; and numbers 41 to 45 are in Great Britain.—Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Establishment number.	Coal for coking.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
1	\$154, 043	\$26, 409	\$957	81, 977	8112	\$183, 49
	**** ***	19, 785	3, 600	600	(a)	b 149, 18
2		24, 021	5, 068	3, 980	163	154, 76
3	94, 145	17, 754	1, 500	1,532	300	115, 22
4		96, 304	9, 600	10, 701	2,000	573, 37
6	454, 774	31, 830		14, 559	200	253, 54
0	206, 957		(c)	9, 539	260	271, 39
7	201, 123	60, 469	(c)			b 6, 70
	4, 601	2, 000		100	(a)	
	2, 480	2, 240	100	100	40	4, 96
0	41, 295	11, 157	900	453	120	53, 92
L	19, 830	7, 699	442	827	75	28, 87
1	24, 550	8, 928	442	1, 013	122	25, 65
3	121, 824	52, 338	1, 150	12, 803	123	188, 23
4	36, 313	13, 616	413	2,343		52, 68
b	19, 254	9, 929	750	350	74	30, 35
A	13, 282	7, 664	. 600	708	93	22, 34
	25, 690	17, 836	3,000	(4)	(a)	d 46, 52
	24, 282	12, 849	300	538	99	38, 65
<u> </u>	58, 298	34, 771	2,040	1, 244	185	96, 53
	24, 386	10, 761	1, 200	258	112	26, 71
0	141, 184	101, 611	5, 500	42, 498	3, 865	294, 65
Landard Commission of the Comm	9, 952	6, 308	1, 467	800	139	18, 66
	59, 210	17, 105	2,440	700	216	79, 87
. amaaamman maanaa		30, 222	4, 200	2, 600	500	199, 93
	162, 605		2, 500	1, 583	300	121, 44
	95, 964	21, 102	2,700	400	75	67, 00
	54, 361	9, 470	1, 250	2,985	66	141, 81
	92, 350	45, 159			100	42, 15
4	29, 226	9, 808	2,000	1, 020		
	46, 556	10, 456	3,000	1, 360	151	61, 52
	16, 478	6, 572	1,000	650	. 28	24, 73
	10, 595	1,778	134		58	12, 72
4	17, 324	1, 912	135	151	116	19, 60
	4, 644	549	66	35	29	5,31
	24, 024	1,900	338	258	111	26, 76
	43, 520	4, 150	232	3, 290		51, 29
4	221,078	17, 047	(e)	# 4, 648	(e1	262, 77
	127, 337	22, 049	(1)	3,796		g. \$156, 17
	35, 336	3, 857	500	153	1, 863	48, 53
de la constitución de la constit	73, 532	19,096	3, 787	5, 509	555	¥162, 63
A VALUE OF SOME OF STREET	70, 373	9, 234	735	1, 666	297	82, 44
	14, 324	4, 653	84	434	(4)	b 19, 49
	k 73, 171	21, 942	(4)	5, 980	1, 113	102, 20
***************************************	14, 243	2,857	223	967		18.29
		1, 829	159	1, 241	*******	17,57
	14, 047	7, 209	660	5, 369	******	38, 19
	46,756	1, 209	000	2,000	******	

a lint reported.

It by a inclination taxes.

It line inclinates were slight, and performed by clerk at another branch of the same establishment.

If he including scapping and repairs and taxes,

If he including scapping and repairs and clerks and for taxes are inseparably combined with these for appoints and repairs.

It has a possible for officials and clerks and insurance are inseparably combined with these for

thought the second should be deducted \$19,000, the value of cinder, tar, and amments produced the second should be deducted \$1,150, the value of tar and amments produced curring the William ponditures for efficials and clerks are inseparably combined with these for coni.

TABLE IX.—COST OF PRODUCTION OF COKE AT VARIOUS OVENS IN VARIOUS STATES-Continued.

D.-ELEMENTS OF COST IN ONE TON OF 2,000 POUNDS.

[Establishments numbers 1 to 30 are in the United States; numbers 31 to 40 are on the continent of Europe; and numbers 41 to 45 are in Great Britain.—Insurance, interest, depreciation of value of plant, and charges for freight of product to place of free delivery are not included.]

Establishment number.	Coal for coking.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
1	\$2,028	\$0.348	20, 013	\$0,026	80,001	-82, 416
0	1. 911	. 302	. 053	, 009	(a)	62. 277
3	1, 887	. 373	.079	. 062	.002	2, 403
4	2.089	. 394	.033	.034	.007	2, 557
5	1,700	. 360	. 036	.040	.007	2, 143
6	1, 864	. 286	(c)	.131	.002	2, 283
7	1,461	. 439	(e)	.069	. 002	1, 971
8	1, 770	.769	(0)	. 038	(a)	b 2, 577
9	. 620	. 560	. 025	. 025	.010	1, 240
0	1. 213	. 328	.026	.013	.004	1, 584
1	. 727	. 282	.016	.030	.003	1, 058
2	.767	279	.014	. 032	.004	1.008
3	.717	.308	.007	.075	.001	1. 108
	.830	.311	.009	.054	.001	1. 204
	.718	.370	.028	.013	.003	
**************************************	. 646	. 373	. 029	.034		1.133
	1,070	. 743	. 125		.005	1.087
7	. 535	. 283	.006	(a) .012	(a)	d 1. 938
			.000		.002	. 838
9	. 503	.300	.017	. 011	.002	. 833
0	. 491	. 217	. 024	,005	.002	. 739
I	.551	. 396	.021	. 166	.015	1. 149
2	. 405	. 257	. 060	. 032	.006	. 760
	1. 333	. 385	. 055	.016	.005	1.794
4	1.861	. 346	.048	.027	.006	2. 288
5	1,500	. 330	. 039	. 025	.005	1. 899
8	2.408	. 419	.120	.018	.003	2.968
<u> </u>	.928	. 454	.012	. 030	.001	1, 425
8	1, 265	. 425	. 087	.044	.004	1.825
9	1, 259	. 283	.081	. 037	. 004	1,664
9	1. 100	. 463	.070	. 046	.003	1.742
	2, 704	. 454	.034	.042	. 015	3. 249
2	2. 530	. 279	. 020	. 022	.017	2. 868
3	2, 321	. 274	. 033	. 017	.010	2. 655
	2, 281	. 180	.032	. 037	.011	2, 541
5	1.458	. 139	.008	. 110	********	1.715
6	2. 498	. 193	(6)	e.052	(e)	2. 743
[1,398	. 242	(1)	.042	f. 033	g, h 1.715
8	1. 531	. 167	. 022	.007	. 047	1.774
9	1.136	. 295	. 058	. 091	.009	i 1. 589
0	1,526	. 200	.016	. 036	.009	1. 787
1	1. 175	. 382	.007	. 036	(a)	b 1.600
2	k 1. 191	. 357	(k)	. 097	.018	1.663
3	1.920	. 385	. 030	. 130	********	2, 465
4	1. 917	, 249	. 022	. 169		2, 357
5	1. 866	. 288	. 026	. 214	*********	2, 394

a Not reported.
b Not including taxes.
c Clerical work very slight, and performed by clerk at another branch of the same establishment.
d Not including supplies and repairs and taxes.
The expenditures for officials and clerks and for taxes are inseparably combined with those for supplies and repairs.
The expenditures for officials and clerks and insurance are inseparably combined with those for taxes.

taxes.

g Including insurance.' h From this amount should be deducted 21.6 cents, the value per ton of product of cinder, tar, and ammonia produced.

i From this amount should be deducted 2.5 cents, the value per ton of product of tar and ammonia

produced.

[&]amp; The expenditures for officials and clerks are inseparably combined with those for coal

THE TENTE STATES—Continued.

OF COST IN ONE TON OF 2,000 POUNDS.

This blokes; numbers 21 to 40 are on the continuent of This table is based on the preceding one and to the continuent in obstance, they are here constinut, and the formula as they formish.)

1000 TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL T

	Constitution of Constitution	Day the	Laber.	Officials and clerks.	Supplies and repairs.	Taxes	Tensi.
			14. 40 13. 26	. 54 2. 42	1.08	. in	286
	1-1	23	15.52	3. 29 1. 29	2.58 1.33	. 105	286
		56. 79	15, 41	1. 29	1.33	- 1	386
		75.12	16.80	1.68	1.86 5.74	. 25	280
		SL 14	12 53		3.50	. 38	28
		76.16	22. 84 45. 16		1.48		286
		56.16	45, 16	- 2.02	2.12	. 20	386
		50, 10 78, 36	29, 71	1,64	. 82	.5	28
		2. 46	26. 65	1.51	2.84	.25	38
		24, 28	25. 46	1.28	2.50	- 200	38
		56.74 56.34	27, 80 25, 83	.75	4.45		38
		12.43	37 60	2.47	2.84 2.92 6.77 4.46 1.15 3.13	.31	24
		58, 43	34, 31	2.67	3.13	- 46	24
		55, 21	38, 34	6.45		-	24
	-	58. 54	33. 77	. 72	1.43	.34	34
	4.5	94, JS		2.01	1.32	- 22	246
		47, 95	29, 36 34, 46	1.83	IL45		34
•		52, 29	32.82	1 7.89	. I		34
	•	74, 30	21. 46	1 1.07	- 30	.3	34
		81. 34	15. 12	2.10	1 13	. 3	34
	•••	78, 98	17. 38	2.05	123	-	34
	•	31. 13	14. 12	4.54		Ä	50
		65. 12 69. 31		.84	' EE	Ξ	2m 2m
		3. 36	17.01	1.87	=	3	35
		day 28	26, 58	4.02	i N	=	35
		43. 28	13. 97	1.05	글	3	28 23
		84, 21	9. 73	.79		3	3
		88, 21 87, 42 88, 77	10.32	1 2	- 2	3	34
		59.77 55.01	7. 0 8 8. 11	1.36	. # 14 14		34
		91. 9	7.04		_ M		7
		51. 52	14, 11	1	2 4	. E	32
		±4, 30	9, 41	1.24	. 4	1.5	2M 2E
		71. 49	18, 56	3.65	1 2	<u>.</u>	=======================================
		:5. 39	11. 19	:4	1.5		36
		73, 44	23. 87 21. 47			_ #	36
		71. 62 77, 39		13	4725251		28
		st. 33		. 23	::		<u>ت</u> الا
		77. 94		1.00	2 14		48

TABLE IX.—COST OF PRODUCTION OF COKE AT VARIOUS OVENS IN VARIOUS STATES—Continued.

F .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1 to 20 are in the United States; numbers 31 to 40 are on the continent of Europe; and numbers 41 to 45 are in Great Britain.]

	Additional cost.						
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Total.			
1	(a)			(a)			
2	(a)		\$2,000	b \$2,000			
3	(a)	\$6, 969		b 6, 960			
4	(a)			(a)			
5	(a)			(a)			
6	(a)			(a)			
7	(a)			(a)			
	(a)			(4)			
	(a)	100000000000000000000000000000000000000		(a)			
0	(a)			(a)			
***************************************	(a)	(a)	(a)				
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.	(a)			(a)			
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a Not reported.

b Not including insurance.

TABLE IX THE THE PROPERTY OF COME AT VARIOUS OVENS IN

CONTRACTOR OF SECOND BUSINESS IN ONE TON OF 2,000

-	-	31	to 40	-	the	continent of
		-				

		Additional cost per ton.				
	:Statement	Interest.	Depreciation of value of plant.	Total.		
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	<u>.</u>	50, 106		3.20		
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3 Not including insurance.

the states of the continue of Europe, and in five establishments in the United States, the continue of Europe, and in five establishments in the United States, the continue of Europe, and in five establishments in the United States, the continue of Europe and in five establishments in the United States, the continue of the establishments in the United States, the continue of the establishments in the United States, the continue of the average cost for the eight establishment of the estab

SUMMARY OF COST OF COKE IN THIRTY ESTABLISHMENTS IN THE UNITED STATES.

[This summary is drawn from sub-tables A to G immediately preceding. The establishments covered are numbers 1 to 30, inclusive, being all the coke evens in the United States from which reports were chained. As may be seen, the periods covered are usually twelve months and are in the years 1888, 1889, and 1890.]

	Tons of 2,	000 pounds.
Elements of cost.	Coat of 2,036,183.	Average cost of one.
Ceal for coking Labor Officials and clerks Supplies and repairs Taxes	\$2, 481, 742 726, 173 58, 119 118, 011 9, 528	\$1, 219 , 257 , 028 , 058 , 065
Total	3, 393, 573	1. 667

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[For all thirty establishments the agents of the Department failed to obtain a statement as to the amount paid for insurance. Two establishments gave the amount paid for interest; the aggregate of these makes the arm credited to this item below. Twenty-seven reported that there was no expenditure for interest, and for one the agent of the Department failed to obtain a statement. One establishments gave the amount charged to depreciation, which is the sum below. Twenty-eight reported that nothing was charged to this item, and for one no statement was obtained. The sums entered in the first column below are, of course, apportioned in the second column among the whole thirty establishments.]

Instract		
Depreciation of value of plant	2, 000	.001
Total	13, 316	. 007

SUMMARY OF COST OF COKE IN EIGHT ESTABLISHMENTS ON THE CONTINENT OF EUROPE.

[This summary is drawn from the preceding sub-tables A to G. The establishments covered are numbers 31 to 36, inclusive, 38 and 40, being all the coke overs on the continent of Europe from which full reports were obtained. As may be seen, the periods covered are irregular and are in the years 1888 and 1889.]

	Tone of 2,	000 pounds.	
Elements of cost.	Cost of 210, 849.	Average cost of one.	
Coal for coking. Labor Officials and clerks. Supplies and repairs. Taxes.	Cost of 210, 849. \$426, 894 40, 427 2, 140 10, 496 1, 704	. 19:	
Total. Tons of coal (2,000 pounds) used in production	481, 750	2. 285	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[For all eight establishments the agents of the Department failed to obtain a statement as to the amount paid for insurance. One establishment gave the amount paid for interest, which is the sum credited to this item below. Seven reported that there was no expenditure for interest. Two establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Six reported that nothing was charged to this item. The sums entered in the first column below are, of course, apportioned in the second column among the whole eight establishments.]

Igaurance		
Interest	\$1, 499	\$0.007
Depreciation of value of plant	2, 586	.012
Total	4, 085	019
		1

H. Ex. 265---16

242 REPORT OF THE COMMISSIONER OF LABOR.

SUMMARY OF COST OF COKE IN FIVE ESTABLISHMENTS IN GREAT BRITAIN.

[This summary is drawn from the preceding sub-tables A to G. The establishments covered are numbers 41 to 43, inclusive, being all the coke overs in Great Britain from which reports were obtained. As may be seen, the periods covered are irregular and are in the year 1889. For all five establishments the agents of the Department failed to obtain a statement the amount paid for the theoretical element of insurance. All five reported that there was no expenditure for interest and that nothing was charged to depreciation, the other theoretical elements.]

	Tons of 2,	000 pounds.
Elements of cost.	Cost-of 113,446.	Average cost of one.
Ceal for coking	\$162, 541 38, 490 1, 126 13, 991 1, 113	\$1. 433 . 339 . 010 . 123 . 010
Total	217, 261	1. 915

SELLING PRICE OF COKE PER TON AT PITTSBURGE, PA.

The price of coke, as sold in the market at Pittsburgh from the latter part of 1887 to May 22, 1890, is shown in the following table:

SELLING PRICE OF COKE PER TON AT PITTSBURGH, PENNSYLVANIA.

[Furnished by H. C. Frick & Co., May 22, 1880.]

Date.	Price.	Date.	Price.
Latter part of 1887	1.75 1.50 1.00	Ang. 6 to Oct. 1, 1889 Oct. 1 to Nov. 1, 1889 Nov. 1, 1888, to Feb. 16, 1899 Feb. 1 to May 22, 1899	1. 50 1. 78

In addition to the foregoing prices, middlemen or brokers are now charged 15 cents per ton, and they in turn charge small consumers another 15 cents per ton.

The following table gives the price of coke at Connellsville for the last 6 years, on board the cars at ovens, per ton of 2,000 peunds:

PRICE OF COKE PER TON AT CONNELLSVILLE, PENNSYLVANIA.

[From the Iron Age, Nov. 12, 1830.]

Month.	1884.	1885.	1806.	1867.	1888.	1886.
January February March April May June July August September October November December	1.00 1.00 1.10 1.10 1.10 1.00 1.10 1.10	\$1. 10 1. 10 1. 10 1. 20 1. 20 1. 20 1. 20 1. 20 1. 20 1. 20 1. 20	\$1.20 1.25 1.25 1.25 1.50 1.50 1.50 1.50 1.50	\$1.50 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	\$1.75 1.75 1.50 1.00 1.00 1.00 1.00 1.00 1.25 1.25	\$1.25 1.25 1.25 1.15 1.16 1.10 1.00 1.00 1.50 1.75

AVERAGE PRICE OF COAL AND COKE PER TON IN CHARLEROL BELGIUM.

[The prices are for tons of 2,000 pounds of coal and coke loaded upon cars at the pits and evens.]

Month.	Furnace coal			Coking coal.				Coke.	
	1888.	1889.	1890.	1886.	1888.	1890.	1886.	1800.	1800.
January February March April May June July August September October November December	1. 441 1. 495 1. 530 1. 500 1. 458 1. 481 1. 527 1. 541	\$1.500 1.543 1.553 1.550 1.546 1.551 1.560 1.604 1.600 1.721 1.707 1.890	\$1.894 1.950 2.050 2.213 2.225	\$1. 327 1. 341 1. 402 1. 451 1. 546 1. 623 1. 663 1. 670 1. 648 1. 663	\$1.670 1.656 1.600 1.605 1.725 1.725 1.712 1.714 1.770 1.767 1.300	\$2.513 1.065 1.265 1.257 1.468	\$2.005 2.012 2.020 2.040 2.150 2.271 2.277 2.287 2.343 2.343 2.344 2.378	\$2.496 2.496 2.496 2.537 2.541 2.501 2.506 2.506 2.507 2.668 2.679 2.835	\$4.296 4.456 4.741 4.966 8.186

Ton.

1

IRON ORE.

245



IRON ORE.

The titles of the table and sub-tables relating to the cost of production of iron ore are as follows:

TABLE X .- Cost of Production of Iron Ore at Various Mines in Various States.

- A.—Period covered and quantity of product.
- B.—Chemical analysis of iron ore (per cent.)
- C.—General statement of cost for the period.
- D.—Elements of cost in one ton of 2,240 pounds.
- E.—Per cent. of each element of cost in one ton of 2,240 pounds.
- F.—Additional cost of certain theoretical elements.
- G.—Additional cost of certain theoretical elements in one ton of 2,240 pounds.

In sub-table A the production for the period covered and the average production per day is shown, for most of the mines reported on, in tons of raw ore. For a few of the mines, however, the production is shown in tons of calcined ore, no information as to the quantity of raw ore produced having been obtained by the Department. The quantity of calcined ore produced in a mine during a certain period is, of course, less than the quantity of raw ore, as there is a loss in weight caused by roasting. In sub-table B showing the analyses of the ores produced by the different mines, the analyses are of raw ore or of calcined ore, in accordance with the way in which the production of the mine, to which each analysis applies, has been shown. None of these analyses show the full 100 per cent. of material in the ore, but the principal constituents of the ores are usually all shown, and the metallic iron contained therein always.

In sub-tables C, D, and E the item of fuel does not appear. The cost of fuel was not separately obtained by the agents of the Department, but where such a cost existed it is included in these tables in the cost of supplies. Some of the mines on the continent of Europe pay a royalty to the state. This royalty has not been separately shown, but being in the nature of a tax it has been included with the taxes.

In iron ore as in coal the cost of production necessarily depends largely upon natural conditions. Some ore is hard to mine, and hence not only the labor cost, but to a certain extent all of the other costs will be enhanced, for any difficulties which tend to lessen the quantity of production attainable tend consequently to increase the cost of production. It is in these natural conditions (which are but too faintly indicated by the tables) that the reader must mainly look for explanation of some of the great variations in cost.

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT.

Es-		Period covered.	Iron ore mined.				
tab- lish- nent L	Locality.		Days		Tons of pound		
ber.	am-	Terminal dates.	ning time,	Character of ore.	Total.	Perday	
1	United States	Sept. 1, 1888, to Aug. 31, 1889	2:0	Hard and soft	93, 055	3"	
2	do	Jan. 1, 1889, to Dec. 31, 1889	300	Hard and soft	19,066	- 13	
3	do	Jan. 1, 1889, to Dec. 31, 1889	250	Medium	33, 000	13	
4	do	l'eb. 1, 1889, to Jan. 31, 1890	240	Soft	89, 826 138, 055	3	
6	do	Feb. 1, 1889, to Jan. 31, 1890 Mar. 1, 1889, to Feb. 28, 1890	270	Hard and soft	63, 788	3	
7	do	May 1, 1889, to Feb. 28, 1890	160	Hard	32, 226	2	
8	do	Nov. 1, 1889, to Jan. 31, 1890	72	Hard	3, 684	-	
9	do	Jan. 1, 1890, to Jan. 31, 1890	25	Hard and soft	3, 915	' 1	
10	do	Nov. 1, 1889, to Nov. 30, 1889	23	(a)	3, 319	1	
11	do	May 1, 1889, to Apr. 30, 1800	307	Hard	52, 713	1	
12	du	Dec. 1, 1888, to Nov. 30, 1889	301	Hard	69, 030	2	
13	do	Dec. 1, 1888, to Nov. 30, 1889	293	Soft	73, 506	2	
14	do	Dec. 1, 1888, to Nov. 30, 1889	270	Hard	12, 360		
15	do	Dec. 1, 1888, to Nov. 30, 1889 Dec. 1, 1888, to Nov. 30, 1889	247 253	Soft	35, 200 17, 297	1	
16	do	Dec. 1, 1888, to Nov. 30, 1889	240	Soft	32, 600	1	
18	do	Dec. 1, 1888, to Nov. 30, 1889	266	Hard	114, 579	1	
19	do	Dec. 1, 1888, to Nov. 30, 1889	247	Sort	74,000	3	
20	do	Jan. 1, 1889, to Dec. 31, 1889	306	Hard	215, 098	7	
21	do	Jan. 1, 1889, to Dec. 31, 1889	307	Soft	771, 279	2,5	
22	do	Jan. 1, 1889, to Dec. 31, 1889	303	Hard and soft	323, 342	1,0	
23	do	Jan. 1, 1889, to Dec. 31, 1889	301	Soft	10, 660		
24	do	Jan. I, 1889, to Dec. 31, 1889	308	Soft	29, 739		
25	do	Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889	301	Hard	20, 032	6	
26 27	do	Jan. 1, 1889, to Dec. 31, 1889	313	Hard and soft	185, 434 50, 290	i	
28	do	Jan. 1. 1889, to Dec. 31, 1889	304	Soft Medium	159, 538	5	
29	do	Jan. 1, 1889, to Dec. 31, 1889	306	Soft	550, 972	1.8	
30	do	Jan. 1, 1889, to Dec. 31, 1889	318	Soft	21,500		
31	do	Jan. 1, 1889, to Dec. 31, 1889	300	Soft	b 116, 000	3	
32	do	Inn. 1, 1889, to Dec. 31, 1889	305	Hard	287, 390	9	
33	do	May 1, 1889, to Apr. 30, 1890	307	Hard and soft	c 140, 440	1 4	
34	do	May 1, 1889, to Apr. 30, 1890 Det. 1, 1889, to Mar. 31, 1890	306	Hard and soft	244, 060	7	
35	do	1 1889, to Mar. 31, 1890	152	Hard	18, 980	1	
36	do	Nov. 1, 1889, to Apr. 30, 1890 Nov. 1, 1889, to Apr. 30, 1890	153 153	Soft	26, 221 53, 315	3	
38	do	11ec. 1, 1880 to Apr. 30, 1890	127	Soft	41, 398	3	
39	do	May 1, 1889, to Apr. 30, 1890 May 1, 1889, to Apr. 30, 1890	306	Hard	d 558, 800	1,8	
40	do	May 1, 1889, to Apr. 30, 1890	308	Hard and soft	317, 827	1,0	
61	do	Jan. 1, 1888, to Dec. 31, 1888	290	Hard and soft	45, 440	1	
12	do	Apr. 1, 1888, to Mar. 31, 1889	308	Hard and soft	117, 403	3	
43	do	May 1, 1888, to Apr. 30, 1889	302	Hard	40, 000	1	
44	do	May 1, 1888, to Jan. 8, 1889	217	Solt	2,070		
45	do	Jan. 1, 1888, to May 31, 1889	303	Soft	78, 549 145, 215	4	
47	do	Jan. 1, 1889, to Dec. 31, 1889	313 260	Hard	e 14, 000	3	
18	do	Jan. 1, 1889, to Dec 31, 1889	234	Hard	f 12, 200	1	
19	do	Jan. 1, 1889, to Dec. 31, 1889	288	Hard	\$ 16,000	1	
50	do	Jan. 1, 1889, to Dec. 31, 1889	275	Hard and soft	5, 579	115	
51	do	Apr. 1, 1889, to Dec. 28, 1889	208	Hard	8, 217		
52	do	Sept. 1, 1889, to Feb. 28, 1890	94	Hard	2, 500		
53	do	Oct. 1, 1889, to June 30, 1890	231	Hard	7, 450		
54	do	Apr. 1, 1889, to Mar. 31, 1860 Apr. 1, 1889, to Mar. 31, 1890	290	Soft	10, 348	116	
6	do	Jan. 1, 1888, to Dec. 31, 1888	302	Hard and soft	6, 050		
57	do	July 1, 1888, to June 29, 1889	237	llard	10, 572		
	do	Jan. 1, 1889, to Dec. 31, 1889	240	Soft	45, 815	1	
59	do	Jan. 1, 1889, to Dec. 31, 1889	302	Hard	7, 624		
	do	Jan. 1, 1889, to Dec. 31, 18-9	228	Hard	8, 815		
60 1							
61	do	Jan. 1, 1889, to June 30, 1889 May 1, 1899, to July 31, 1889	142	Hard and soft	2,810	119	

a Nat reported.

b Bessemer, 8,800 tons; non-Ressemer, 107,200 tons.
c Bessemer, 65,000 tons; non-Ressemer, 75,400 tons.
d Bessemer, 289,314 tons; non-Bessemer, 260,476 tons.
c Calcined or ressted ore; equals 27,000 tons in the raw state.
f Calcined or ressted ore;

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

A .- PERIOD COVERED AND QUANTITY OF PRODUCT-Concluded.

	a b	Period covered.		Iron ore	mined.	
tab-	Locality.	1 - 10 - 112,0 - 1	Days		Tons of pound	
ber.		Terminal dates.	run- ning time.	Character of ore.	Total.	Per day.
64	United States	Sept. 1, 1889, to Feb. 28, 1890	113	Hard	3,850	34
65	do	Jan. 1, 1889, to Dec. 31, 1889	300	Hard and soft	29, 958	100
66	do	Feb. 1, 1859, to Jan. 31, 1890	310	Hard	123, 574	399
67	do	Jan. 1, 1888, to Dec. 31, 1888	310	Hard and soft	30, 250	98
68	do	Jan. 1, 1888, to Dec. 31, 1888	312	Hard and soft	63, 500	204
60	do	Jan. 1, 1888, to Dec. 31, 1888	240	Hard and soft	33, 546	140
70	do	July 1, 1888, to June 30, 1889	312	Soft	49, 460	159
71	do	Jan. 1, 1889, to Dec. 31, 1889	295	Soft	51,551	173
72	do	Jan. 1, 1889, to Dec. 31, 1889	296	Medium	218, 738	739
73	Continent of Europe	July 1, 1887, to June 30, 1888	(a)	Hard	44, 280	(a)
74	do	July 1, 1887, to June 30, 1888	(a)	Hard	4,921	(a)
75	do	Apr. 1, 1888, to Mar 31, 1889	298	Soft	31,691	100
76	do	Jan. 1, 1889, to Dec. 31, 1889	296	Hard	35,041	118
77	do	Jan. 1, 1889, to Dec. 31, 1889	300	Hard	1,240	4
78	do	Jan. 1, 1889, to Dec. 31, 1889	290	Hard	93, 858	324
79	do	Jan. 1, 1889, to Dec. 31, 1889	290	Hard	b 26,030	. 690
80	do	July 1, 1889, to Sept. 30, 1889	74	Hard	9,858	133
81	do	June 1, 1887, to May 31, 1888	305	Soft	81,857	278
82	do	June 1, 1887, to May 31, 1888	306	Soft	9,107	30
83	do	June 1, 1887, to May 31, 1888	306	Soft	39,883	130
84	do	June 1, 1887, to May 31, 1888	306	Soft	4, 434	14
85	do	June 1, 1887, to May 31, 1888	306	Soft	14, 104	46
86	do	July 1, 1887, to June 30, 1888	(a)	Hard	9,842	(a)
87	do	July 1, 1887, to June 30, 1888	(a)	Hard	23, 621	(a)
88	do	July 1, 1887, to June 30, 1888	(a)	Hard	14,763	(a)
89	do	Jan. 1, 1887, to Dec. 31, 1888	662	Hard	355, 298	537
90	do	Jan. 1, 1889, to Dec. 31, 1889	331	Hard and soft	63,973	193
91	do	Jan. 1, 1889, to Dec. 31, 1889	300	Soft	245, 244	817
92	Great Britain	July 1, 1889, to Dec. 31, 1889	155	Hard	612, 104	3, 949

a Not reported.

b Calcined or reasted ore.

LELL'S STATES—Continued.

3. - STATISTS OF IRON ORE (PER CENT.)

Tailed States; numbers 73 to 91 are on the continent of

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-			1	141	(4)	9, 790	2 500	`.JG
~ :			z .	445 50	(48)	13, 100	(4)	(4)
		ت ب	4.	. 260	(a) (a)	5, 730 17, 310	(a)	(4)
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		- `	. •	~	,	2	_	141
			4		2	: - **	- 11	(48)
		_		• •	1	(# 4V	(3) (3)	(4)
				•	2	31. 18.31.)	(4)	(4)
			•		-V	10.	· @)	(6)
		. '4	•		4	•	(4)	(6)
		n . To 188	•	٠,		T WO	(6)	(4) (4)
			•	.>-	•	74. LW	(G) L	(=)

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

B.-CHEMICAL ANALYSIS OF IRON ORE (PER CENT.)-Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and number 92 is in Great Britain.]

Es- tab- lish- ment num- ber.	Kind of ore.	Iron.	Manga- nese.	Phos- phorus.	Sul- phur.	Silica.	Alu- mina.	Lime.
**	V	40.000	2.4	7.1	m		6.0	
59 60	Magnetite	48. 000	(a)	(a)	Trace.	(a)	(a)	(a)
	Maguetite	58, 662	(a)	. 034	2.180	7.488	(a)	(a)
61	Red bematite	42,000	(a)	(a)	_(a)	(a)	(a)	(a)
62	Carbonate	32, 500	(a)	.750	Trace.	17. 500	(a)	(a)
63	Fossiliferons	47.000	(a)	. 025	Trace.	9. 000	(a)	(a)
64	Red hematite	43.000	(a)	(a)	(a).	20,000	(a)	(a)
65	Fossiliferous, hard	34, 560	(a)	.375	(a)	5.960	(a)	37.850
(Fossiliferons, soft	47. 140	(a)	. 480	(a)	12. 980	(a)	(a)
66	Hematite	30,000	(a)	.400	(4)	10,000	(a)	18. 000
67	Brown hematite	42, 000	(a)	.013		15,000	(a)	(a)
68	Brown hematite	48. 090	(a)	. 482		15, 160	2.810	. 280
69	Brown hematite	40, 003	(a)	. 642	. 079	2,507	(a)	(a)
70	Brown bematite	42, 000	(a)	. 003		23, 500	(a)	(a)
71	Red hematite, Bessemer	62,000	. 137	.036	.061	5, 880	2, 090	. 111
72	Hematite	60, 500	- (a)	. 257	. 009	3, 700	(a)	(a)
73	(a)	49.000	1 .150	. 750	. 090	14.000	5, 100	5,000
74	(a)	39, 850	(a)	. 625	(a)	19, 200	5, 250	3, 600
75	(a)	40, 000	3,000			12,000	(a)	(a)
765	Red iron ore	47, 500	3,000	.010	(a)	16, 000	(a)	(a)
/	Spathio	37, 5(0)	7, 500	(a)	Trace.	(a)	(a)	(a)
77	Spathic	35, 200	8, 200	.010	(a)	7, 600	(a)	(a)
78	Spathic	38, 860	9, 200	Trace.	- 027	. 2:4	(a)	.700
79	Spathic (b)	47, 420	9, 280	Trace.	. 025	12, 580	(a)	(a)
80	Spathic	35, 000	7, 500	(4)	c . 125	9, 000	(a)	(a)
81	(a, b)	63, 630	(a)	, 015	(a)	6. 100	1.880	(4)
82	(a, b)	64, 120	(a)	.010	(a)	5, 600	1. 800	(4)
83	(a, b)	64, 120	(a)	.010	(a)	5, 600	1. 800	(4)
84	(a)	68, 236	(a)	(a)	(a)	(a)	(a)	(a)
85	(a, b)	61, 460	(a)	. 020	(a)	8, 000	2,000	(a)
86	(4)	38, 350	.100	.780	010	17.800	8. 600	(a)
87	(a)	36, 000	.150	. 650	.010	N. 200	4. C00	(a)
88	(a)	42, 000	.300	. 600	.010	8, 000	7. 150	5,000
89	Brown hematite	52, 000	(a)	Trace.	Trace.	9, 500	(a)	(a)
90	Brown hematite	50, 600	(a)	. 024	. 100	10, 000		(a)
91	Limonite.	49,000	(a)	Trace.	.100	3, 500	(a)	
92		31,000	(a)	1, 000	.060		(a)	(a)
92	Oolitie	91,000	(4)	1,000	. 000	13.000	(a)	(a)

[&]amp; Not reported.

b Calcined or roasted ore.

e Including copper.

Take X -- COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES-Continued.

C.—GENERAL STATEMENT OF COST FOR THE PERIOD.

(Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the confinent of Sample; and number 92 is in Great Britain.—Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to owners of the soil are not included, but royalty to the state, when paid, is included under taxes).

Zetasliehment number.	Labor.	Officials and clerks.	Supplies and repairs.	Tates.	Total
	\$51, 935	\$1,927	85, 512	\$250	\$50, (
	7, 640	1,000	763	88	2.4
SMILE OF TAXABLE PROPERTY.	16, 838	2,100		100 239	18, 9
	48, 909 77, 259	2,340		400	63.4
	72, 119	5, 400	720	100	78.1
	25, 272 4, 554	1,650	2,400	105	29.4
	4, 554	100	300		4.1
	2,677		206	Contract Contract of	2.1
	1, 495	258	248	3 704	2.3
	59, 685	4,060		Mr. SALES	20u.1
	39, 934	2, 730 3, 5ee	34, 801	2,610	79.7
THE REAL PROPERTY AND ADDRESS OF THE PARTY AND	12, 370	371	11,941	T 410	55.
10 000000000000000000000000000000000000	39, 994	2.500	12,721	1,235	34, 5
	16,842	1,200	6, 948	341	25.1
	36,049	2,300	6, 092	1 ===	6.1
1 1424 :- 200 200 200 200 200 200 200 200 200 20	95, 893	4, 080		8, 565	294, 1
CALL OF CONTRACTORS	81, 995	900	26, 426	1 254	112,
	408, 000	18, 200	99, 021		540,
*** *************	621, 039	7,500	313, 334	21 425	165,
	371, 481, 16, 784	2 000	145, 780 3, 900	439	T.
	44, 108	2,000 2,100	15 361	955	A
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	41, 129	1 7.9440	15,361	953 1, 376	E
	164, 284 44, 741	1, 220	54.777	4 6=:	-
	44, 741	1, 220	28. 2006	601	豆
	190, 471	· 3,060	5- 46-		
	704 823	12,393	38. 562	31, 566 344	D06 .
	29, 219 160, 260	4, 500 10 700	10, 302 61, 675	1.7	\$:
	27.9, 200	26, 530	13.77	34.77	=
•	194, 134	. 4.40	67, 735	A.F.	=
••••	281. 940	10 (03	:52 1	34.00	444
	10.750	1, 250 213 779	4, 900	7. 7.	:: .
	24 125	213	4 601 16, 57	72	47.1
• •	49 573	7.3	16, 57		5. 34.
•	45 630	%ã 22, €3)	1 156 15a 258	, scal	¥.
• •	544, 454 284, 3 51	1: 800	81 24	* 1466 3. 447	-
•	71 277	4.4.0	91, 246 13, 373		
	130,486	21, 100	51, 183	12:12:	=-
	28 741	2 600	11, 446	141	41
	64,12	LA.	1,300		
	72 925	2 5.7	30, 214		: #5
	47 791		₩. 199	7 100	:3:
	23 426	1, 8 4 2, 500	1, 546	r	Ξ
	27. : 44	نگ	1 = 1	14	=
	10 447	2 90	1 3	S .	- -
		150	1 5.73		31.
13	3 413		777	53	•
	12 204	863	2, 534	: i ·	34.
	21 1/4	2 630	2.54	7	3
	26 100	1,776	1 .C	بدو نڌ	=
	4 226	1 34,			
	46 44:	: 5	: 36	_ [A	= = :
	3 .40	فبد	1 :45		II :
	9 .40	اد <u>۔</u> اد	2 984	 2.	S. C
	1.94	249	• 5	3	•
•	1 440	700	45:		
	6 457	2.5	. 24	*	
	1 453	·	: 5%		, i
	71 441 71 40	2 470	44 24	24	- 3
	11.6	3 4.5		DN	.4
	40 75	2 (4)	:1 200	; 5m	*
	·: · Ξ	1 :40	4.5:3		•
	11 .12 12 42		14. 204		5

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TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

C .- GENERAL STATEMENT OF COST FOR THE PERIOD-Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and number 23 is in Great Britais.—Insurance, interest, depreciation of value of plans, charges for freight of product to place of free delivery, and revalty to owners of the soil are not included, but royalty to the state, when paid, is included under taxes.]

Zetablishment number.	Labor.	Officials and clerks.	Supplies aud repairs.	Taxes.	Total.
	2101, 781	85, 444	45L 621	8254	\$158, 500
	143, 201	5, 044	79, 482	2 004	220, 221
	(a)	(a)	(6)	(a)	(4)
	(6)	(a)	(a)	(a)	(a)
	19, 617	1,877	5, 494	` 257	26, 086
	41, 616	2, 230	16, 584	1, 754	65, 314
	2, 408	190	179	107	2, 871
	120, 124	4,004	43, 556	8, 570	171, 936
	42,006	633	12, 503	1, 318	56, 461
	14, 150	405	2, 461	204	17, 256
	37, 784	ð 15, 401	5, 133	ø 81, 506	ø 139, 834
	7, 288	b 1, 638	807	e 8, 728	o lm, 561
	22, 767	b 7, 232	2, 383	e 28, 235	e 70, 717
	5, 367	b 787	558	04, 237	# 10, 96
•••••	13, 978	b 2, 550	1, 614	0 13, 543	430, 780
	(6)	(a)	(4)	(a)	(4)
·····	(a)	(a)	(4)	(-)	(6)
••••••••••••	(6)	(6) 4. 885	(6)	(e) 	(4)
	183, 570		34, 800	44,513	171, 041
	435, 121 462, 518	(d)	4, 606 17, 412		•40, 117
	238, 507	(d) 6, 570	101, 528	#2, 738 4, 244	# F4, MEI 250, 941

a Not reported.

b Including office supplies.

c Including reyalty is state.

d The angestizates for officials and clerks are inseparably combined with those for labor.

Table X. COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

I). -ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Rivone; and number 92 is in Great Britain—Insurance, intercet, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to owners of the soil are not included, but royalty to the state, when paid, is included under taxes.]

Katablishment number.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
	\$0.558	80.021	\$0.059	\$0.003	\$0, 64
	. 401	.052	.040	.005	. 49
· · · · · · · · · · · · · · · · · · ·	. 510	.008	. 053	.003	. 57
trummonammonammon	. 560	.017	.025	.004	. 61
	1. 131	.085	.011	.001	1, 22
Constant and Constant and Constant	. 784	. 051	. 075	.003	. 91
8	1, 236	. 027	.082		1. 34
	. 684	*********	.076		. 76
annunum maneramanan	. 450	.078	.075	.018	. 62
	1, 132	. 078	. 641	. 064	1. 91
	. 543	. 039	. 362	.041	1.41
	1,001	. 030	. 966	.063	2.06
	1, 136	. 071	. 361	.038	1, 60
	, 976	, 069	.402	. 020	1, 46
Total communication of the com	1.106	.071	. 248	.037	1.46
amor aroundmentarion	. 837	. 036	.748	.075	1. 61
Communication of the Communica	1. 108	.012	. 357	. 044	1, 5
·	1. 897	. 085	. 460	.070	2, 51
	1. 155	.010	.406	028	1.2
	1, 575	. 188	.375	. 040	2, 1
	1.615	.071	.517	.032	2.2
	2,054	, 099	.414	. 063	2.6
A COMMISSION OF THE PROPERTY OF THE PARTY OF	. 897	. 033	.306	.022	1. 2
- wassessessessessessessessesses	. 891	. 024	. 578	.012	1,50
Commission funtamina	. 686	. 023	. 367	. 018	1.0
Construction of the contraction	1. 283	. 023	. 355	.057	1.7
	1, 312	, 209	359	.070	1.9
	1. 320	. 092	. 452	.057	1.90
	1, 397	.032	. 482	. 963	î.s
	1. 573	. 041	. 627	.078	2.3
	, 866	. 066	. 261	. 026	. 91
	1.441	.008	, 306	. 030	1.8
	. 830	.014	305	.020	
	1. 1112 1991	.017	. 221	. 629	L34
	243	.0.9	. 289	.010	i
	,314	. 185	. 307	1 .004	īā
	1, 154	. 186	. 436	.043	ĪŔ
	. 720	9:9.	. 276	. 002 '	1.
	94.623	. 193	. 483		44.7
kalan da kalan kalan kanan kanan da kanan da kanan da kanan da kanan da kanan da kanan da kanan da kanan da ka	100	. 652	. 385		1.34 .87
	, a#? 1 ###	. 424	. 278	.048	1.2
	1 250	. 206	. 151		
	1 2	. (34	.111	. 812	î.
	1 5500	. 359	. 226	151	ī
	1 24	. 618	. 435	**********	Le
	1 002		. 211	. 😥	1.7
	3 739	. 3:9	, 349	. 835	2.3
	7 VA	:30			2.3
	164	133	. N*	***	1.0
	1:3	1,2	17	. —	ii
** **	. 1:5	1.00	454	ant	13
	: :04	MS		Nr"	ī
	. S.Pm	160	. 346	8.8	13
	94	W.	8.12	240	1.5
	, 1900		. 7		1:
	: AND	(:)	1	347	1.3
	. 🛫	6.2	#2. ##1	8:* Ref	12
	. 184	4.4			* 3
	3.3	1.84		<u> </u>	1.2
		1	:3		ii
	9.39	1.5	37		-5
			-		

明治 | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | August | Augus

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

D.-ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS-Concluded.

[Establishments numbers 1 to 72 are in the United States: numbers 73 to 91 are on the continent of Europe: and number 93 is in Great Britain.—Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to owners of the soil are not included, but royalty to the state, when paid, is included under taxes.]

Establishment number.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
71	\$1. 974 . 655 . 845 . 296 . 600 1. 274 1. 938 1. 280 1. 614 1. 449 . 445 . 445 . 571 1. 210 . 997 . 180 . 344 . 345 . 34	\$0. 106 .023 .023 .023 .043 .047 .153 .050 .024 .041 b.180 b.181 b.177 b.181 .012	\$0. 990 . 363 . 375 . 045 . 172 . 478 . 144 . 480 . 250 . 060 . 099 . 060 . 134 . 114 . 023 . 057	\$0.005 .012 c.173 c.088 .060 .096 .083 .051 .021 c.958 c.961 c.958	\$3. 075 1. 063 6. 1. 416 6. 452 2. 822 2. 1. 884 2. 321 1. 832 2. 1. 1648 6. 2. 037 6. 1. 773 6. 2. 477 6. 2. 182 6. 2. 474
88	. 487 . 376 c. 549 c. 259 . 389	. 023 . 011 (a) (b) . 011	. 059 . 081 . 072 . 071 . 106	a. 059 a. 013 a. 006 a. 015 . 007	4. 628 4. 481 4. 627 4. 345 573

a Including royalty to the state.
 b Including office supplies.
 The expenditures for officials and clerks are inseparably combined with those for labor.

Table X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

E. —PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,340 POUNDS —Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 72 to 91 are on the continent of Europe; and number 92 is in Great Britain.—This table is based on the preceding one and to avoid duplicating the notes, which would be the same in substance, they are here emitted, and the reader is referred to that table for such information as they furnish.]

Establishment number.	Labor.	Officials and elerks.	Supplies and repairs.	Taxes.	Total
	83.88 85.99 84.38 84.37 742.13 77.22 77.32 77.35 77.35 77.35 77.36	2.19 1.63 5.09 6.59 2.73 1.11.05 8.64 10.21 7.15 7.15 8.30 4.83 4.85 4.85 8.86 8.86	24. 47 26. 46 20. 50 25. 38 6. 23 25. 33 25. 33 25. 33 26. 12 3. 64 4. 55 5. 64 10. 68 10. 68 11. 48 20. 58 11. 48 20. 58 11. 48 20. 58 20. 58	1. 14 12. 22 19. 47 2. 68 3. 2. 07 2. 35 1. 20 56. 31 47. 03 54. 20 34. 00 21. 50 2.	100 100 100 100 100 100 100 100 100 100

H. Ex. 265---17

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

E.—PER CENT. OF RACE ELEMENT OF COST IN ONE TON OF 2,940 POUNDS.

[Establishments numbers 1 to 72 are in the United States; numbers 72 to 81 are on the centiment of Europe; and number 92 is in Great Britain.—This table is based on the preceding one and to avoid uplicating the notes, which would be the same in substance, they are here omitted, and the reads is referred to that table for such information as they furnish.]

Establishment number,	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
	87, 05	3.28	9, 20	.47	. 1
	80, 52	10.44	8, 63	1.01	1
	88, 85	1.40	9. 23	.52	1
	89, 20	3. 76	6, 38	.68	1
	92, 56	- 2.81 6.92	4. 13	.50	1
	92, 10 85, 87	5, 59	8. 21	.08	1
	91. 89	2.01	6. 10	.00	
	90.00	2. 01	10.00		
	72, 46	12.56	12.08	2.90	1 1
	59, 11	4.08	33, 47	2.34	
*******************************	68, 70	2.76	25, 64	2.90	
	50. 04	4. 52	43. 69	1.75	1
	48.59	1.46	46.89	3.06	
	70.73 66.53	4.42	22, 48 27, 40	2.37 1.38	
	75, 65	4.71	16, 96	2.53	
	49. 35	2.12	44. 11	4.42	1
	72.85	.79	23. 47	2,89	3
	75. 52	3.38	18.31	2, 79	3
	64. 45	. 80	32, 51	2.24	1 3
	66, 42	2, 59	25. 93	5.06	
	72.31	8. 63	17. 22	1.84	
	72. 26	3, 18	23.13	1.43	100
	78. 10	3.76 2.62	15.74 24.33	2.40 1.75	-
	71.30 59.20	1,50	38. 41	.80	
	62, 71	2.10	33. 55	1.64	
	74. 68	1.34	20, 66	3.32	- 3
	64.38	10.25	23, 31	2.06	
	72. 62	4, 83	18. 87	3.68	1
	68, 71	4.79	23. 53	2.97	1
	70.77	1.62	24. 42	3. 19	
	67. 83	1.77	27.04	3. 36	
	61.50	7.18	28. 40	2. 83 1. 64	
	81.15 73.29	1.10	16, 77 24, 03	1.58	3
	81. 03	1. 25	16. 25	1.47	- 3
	73. 29	4,40	21, 34	. 97	
	71.43	4.71	23.06	, 80	
	49.80	17.93	29. 75	2.52	
	64. 11	10.04	23, 53	2.32	
	67. 42	6, 55	25. 84	.19	1
	85. 76 69. 00	4. 07 2. 38	10.17 28.62		3
***************************************	56, 33	4.59	33, 29	5,79	
	86. 47	6.61	6.56	. 36	
	80, 85	10.91	8. 03	.21	
	92, 34	1.52	6, 03	.11	
	72. 17 72. 59	13,78	12.13	1. 92	1
	72, 59	1.09	26, 32	**********	1
	81. 36	******	17. 51	1 13	3
	78.31 79.43	5.39 9.15	15, 40 8, 61	2.81	
	79, 43	5. 39	15, 72	1.54	
	73, 69	5, 51	20, 45	.35	1 1
	91, 69	5, 36	2, 95		
	85, 12	10, 53	4, 18	.17	1
	76, 77	4.02	18.76	.45	- 1
	76, 53	4.88	17, 50	1.09	
***************************************	73. 70	5, 51	20. 21 7. 73	. 58	1
	87, 12	5, 15	7. 73		1
	90, 52 69, 17	3.33	5, 57 24, 34	. 58	
	94, 19	5. 69	5, 20	. 61	- 1
	64, 17	1, 63	83, 68	.52	
	78, 35	6.76	16. 22	67	
	78, 49	6.31	13. 41	1,79	- 1
	67, 79	5.00	27.11		• 1
	72. 78	11.63	15.11	. 48	1
	64. 20	8,45	82.19	.10	

Table X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

E. —PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,240 POUNDS —Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 72 to 91 are on the continent of Europe; and number 92 is in Great Britain.—This table is based on the preceding one and to avoid duplicating the notes, which would be the same in substance, they are here emitted, and the reader is referred to that table for each information as they furnish.]

Establishment number.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total.
72	62, 20	2.19	34, 47	1.14	100
73	59, 68	1,62	26. 48	12, 22	100
14	65. 49	5, 09	9. 95	19.47	100
75	72, 90	5. 23	20.90	. 97	100
76	68. 35	3,59	25. 38	2. 68	100
7	83, 50	6. 59	6. 20	3.71	100
78	69.87	2. 73	25. 33	2.07	100
9	74. 41	1.11	22. 13	2. 35	100
80	82.18	2.24	14. 28	1.20	100
	27. 00 39. 27	11.05	3.64	58.31	100
2	32. 21	8.84	4, 86	47. 03	100
3	48, 85	10. 21	3.38	54. 20	100
3	42.48	7.15	5.41	38, 59	100
5	65, 69	8.30	5. 22	44.00	100
50	60, 92	4.38	8.40	21.53	100
SR	77, 55	3, 66	10.03	25,00	100
88	78, 17	2, 29	9.40	9, 39	100
	87, 56	2.29	16.84	2.70	100
N	75, 07		20, 58	. 96	100
2	67.89	1, 92	28, 97	4.35	100
K	01.09	1.92	28.97	1. 22	100

H. Ex. 265-17

Table X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

F .- ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and number 92 is in Great Britain.]

Establishment number.	Additional cost.					
	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total	
	0.557				Green Z	
***************************************			\$1,000		\$1,0	
	\$50				7-1-5	
	50		1,528		1,5	
	75	(a)	309		83	
	106		5, 000		5, 1	
	130	**********	3,000	**********	3, 1	
	*********	**********		*********		
	**********	**********	************	\$404	1	
******************************	*********	********	100	*********		
	877	\$7, 813	6,740	***************************************	15,4	
	251 575	2, 350	5, 522 658	17, 258	23, 0	
***************************************	300	729	000		1,0	
*********	197	5, 179	1,011	13, 553	19,	
	33	721	641	10, 000	1,	
***************************************	275	2 740	2, 269	13, 040	18,	
***************************************	689	5, 572		20,000	6,	
	499	283	1,711	29, 600	32,	
	2, 950	21, 510	15, 057	86, 039	125,	
	2, 476	11,604	46, 277	261, 843	322.	
	1, 746		72, 814		74.	
	172		533			
***************************************	150	3, 447	446		4.1	
	180			9, 511	9,	
***************************************	670	15, 750	12, 980	55, 630	85, (
****************************	300	500	2, 560	12, 550	15,	
	650	1,068	12, 763	63, 815	78,	
***************************************	2,014	140,000	52, 424	220, 389	414,	
***************************************	550 1, 944	1, 340	10 000	10, 750	11,	
			10, 000	34, 800	48,1	
***************************************	3, 419		9, 831		3,	
	720		0,002		.,	
	87	2.450	949	4 745	8,	
***************************************	262	2, 450 7, 630	, 2,622	4, 745 8, 391	18.	
	533	8,400	5, 331	21, 326	35,	
	414	6, 271	4, 140	13, 247	24,	
	1,500		116, 913	195, 580	313,	
***************************************	2,780	6, 356	14, 714	101, 836	125, (
				22, 731	22,	
***************************************		**********			*******	
	80	14, 225	464		14,	
	**********	315		345	1	
	400	7,000	22, 413		7,	
********************************	2,500 185	515	22, 413	500	24,	
******************************	183	2.2		1 600	1,1	
***************************************				1, 830 1, 280	1,1	
********************************		500		1, 200		
*****************			, , , , , , , , , , , , , , , , , , , ,	4, 109	4,1	
	(a)	175	(a)	500	6	
***************************************	444		1-1	1, 860	1,8	
***************************************				*************		
	18	500	605	1,756	2,1	
		(a)	(a)	1, 586 16, 755	d 1,	
		1,500	1,000	16, 755	19,	
***************************************	50	(a)	762		0.0	
	2,000	2,000		3, 085	7.5	
	40	600	281	703	1.6	
		625			,	
	22	450	(1, 925	423	
	. 20	. 930	(a)	1, 862		

a Not reported.
b Not including interest
c Not including insurance and depreciation.

d Not including interest and depreciation. 6 Not including depreciation.

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

F.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and number 92 is in Great Britain.]

	Additional cost.					
Zetablishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total	
	(a)	\$800	\$6, 000		\$6, 80 (6)	
 		(s)	(a) (a)	\$10, 064	- \$ 10, 08	
	\$863 (æ)	7, 010 22, 750	13, 124	25, 776 13, 124 (a)	82, 78 49, 86 (e)	
	(a)			(4) 4,975	(a) 4, 97	
	70 40		8, 045		3 , 06	
	558 57 266	(a) (a) (a)	862 93 405		6 1, 42 6 16 6 67	
	26 92 (a)	(a) (a)	45 143	•••••	c 1 e 21 (a)	
7	(a) (a)			90, 250 6, 500	(&) (&) 90, 2: 6, 5:	
1				78, 074	73, 07	

a Not reported.

b Not including interest and depreciation.

e Not including interest.

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Continued.

G.—ADDITIONAL COST OF CRETAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUMDS.

[Establishments numbers I to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and number 22 in in Great Britain.]

·	Additional cost per ten.						
Entshiiskusest sumber.	Insutance.	Interest.	Deprecia- tion of value of plant.	Reyalty to owners of soil.	Total.		
	**********		90, 052		80.		
	\$6.642 .001 .061		!		***		
	.001		.017				
	.661	(a)	.002		b .		
	.00:		.078				
	.04		. 083				
	•••••			\$0, 103	• • • • • • • • •		
			. 030	\$0.103	•		
	.017	\$6.149	. 128				
			.000	. 250	•		
	. 004 . 005 . 004 . 005	.032	.000				
	. 194	. 050					
	. 006	. 147	. (23)	. 385	:		
	. 002	. 042	. 637				
	. 👐	. 664	. 070	. 100			
	. 006 . 007 . 014 . 003 . 005	. 049			•		
		. 004 . 100	.623	. 100	:		
	. 614	. 015	.070	. 400	•		
	:===	. 413	. 089		:		
	. 016		8.00		•		
	. 005	.116	. 015				
	.000			. 475	:		
	. 004	. 065	.070	. 300 . 250			
	910. 149. 149.	. 010	. 061	. 250			
	.004	. 007	.000	. 400			
. , . , . , . , . , . , . ,		. 254	. 005	. 400			
	. 626 . 0 17	.012	.066	. 500	•		
	:013			. 300	•		
	. 44.3	•••••	. 070	************	:		
***************************************	. 843			••••	:		
	. 005	. 129	. 050	. 250			
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. 910	. 291 . 158	. 100	. 320			
	.010	. 153	. 100	. 400			
	. 010	. 151	. 100	. 320			
	. 945 944 .		. 209	. 350			
	. 440	. 020	. 046	. 320 . 5ue			
				.300	•		
	: £60;	. 356	.011		• • • • • • • • • •		
		. 152		. 167	:		
	. 946	.000			:		
	.017		. 154				
	. 913	. 040		. 036			
· · · · · · · · · · · · · · · · · · ·				. 150			
			•••••	. 0=0	•		
		. 090		. 500			
	(4)	. 070	(6)	. 200	e.		
	· · · · · · · · · · · · · · · · · · ·		\ - /	.250	• • • • • • • • • • • • • • • • • • • •		
	**********	*********			· · · · · · · · · · ·		
		. খেক	. 100 1	. 290			
		(d)	(a)'	. 150	₫.1		
, ,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(2)	. 022	. 365			
	. W.	(42)	. 100	. 350	b .		
		214	. 100	. 350 . 250 :			
were a second of the second of				۱ لامن			
	VM.	.116					
	, 1974						
	in.	. 117	(d) (d)	. 500 . 062	e.6		

d Not including interest and depreciation.

Sub including depreciation.

TABLE X.—COST OF PRODUCTION OF IRON ORE AT VARIOUS MINES IN VARIOUS STATES—Concluded.

G.—ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,940 POUNDS.—Concluded.

[Establishments numbers 1 to 72 are in the United States; numbers 73 to 91 are on the continent of Europe; and dumber 92 is in Great Britain.]

	Additional cost per ton.						
Establishment number.	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total.		
86	(6)	\$0.006	\$0,049		\$0.055 (a)		
88		(6)	(a) (s)	\$ 0. 30 9	(a) b. 300		
71 72 73	90. 004 (&)	. 136 . 104	. 060	,500 ,060 ,019	- 636 . 228 c . 019		
74	(a)			(a) . 137	(a) . 157		
7 8 	. 001 . 002		.117		. 001 . 119		
1	.007 .006 .007	(a) (a) (a)	.010 .010 .010 .010		d. 017 d. 916 d. 017 d. 016		
55	.007 (a) (a)	(a)	. 010		d. 017 (a) (a)		
8	(a)			. 254 . 102	(a) . 25 . 10		
2	••••••		•••••••	. 119	.119		

a Not reported.b Not including interest and depreciation.

Summaries of the preceding tables on iron ore now follow. These show that for the 72 establishments of the United States the average cost of one ton of ore is \$1.482, with a possible addition of 33 cents for theoretical elements; for the 12 establishments of the continent of Europe it is \$1.108, with an additional theoretical cost of 14.3 cents; and for the single establishment of Great Britain it is 57.3 cents, with an additional theoretical cost of 11.9 cents.

c Not including insurance.
d Not including interest.

SUMMARY OF COST OF IRON ORE IN SEVENTY-TWO ESTABLISHMENTS IN THE UNITED STATES.

(This summary is drawn from sub-tables A to G immediately preceding. The establishments covered are numbers 1 to 72, inclusive, being all the iron overmines in the United States from which reports have been obtained. As may be seen, the periods covered are usually twelve months and are in the years 1888, 1889, and 1890.]

	Tone of 2,240 pounds.		
Elements of cost.	Cost of 6,817,171.	Average cost of one.	
Labor	96, 565, 418	\$1.039	
Labor	311, 082 2, 264, 320 219, 665	. 049 . 359 . 035	
Total		1.482	

SUMMARY OF COST OF THEORETICAL RURNERTS IN THE ABOVE

[Forty-five establishments gave the amount paid for insurance. The aggregate of these makes the sum credited to this item below. Twenty-five reported that they had no insurance, and for two the agents of the Department failed to obtain a statement. Thirty-six establishments gave the amount paid for interest; the aggregate of these makes the sum below. Thirty-two reported that there was no expenditure for interest, and for four no statement was obtained. Thirty-sight establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Twenty-sight proported that nothing was charged to this item, and for six no statement was obtained. Thirty-sight gave the amount paid as royalty to the owners of the soil; the aggregate of these makes the sum below. Thirty-four reported that nothing was paid as royalty to the owners of the soil. The aggregates entered in the first column below are, of course, apportioned in the second column among the whole seventy-two establishments.]

Insurance	810, 849 454, 492	\$0.006 .049 .072
Royalty paid to owners of the soil	1, 284, 098	. 203
Total	2, 083, 271	. 330

SUMMARY OF COST OF IRON ORE IN TWELVE ESTABLISHMENTS ON THE CONTINENT OF EUROPE.

[This summary is drawn from the preceding sub-tables A to G. The establishments covered are numbers 75 to 85, inclusive, and 39, being all the iron ore mines on the continent of Europe from which full reports were obtained. As may be seen, the periods covered are usually twelve months, and are in the years 1887, 1888, and 1889. The large cost of taxes reported for these twelve establishments is accounted for by the fact that in six of them an item of royalty paid to the state is included under the head of taxes. In the six establishments the total amount paid for taxes (including said royalty) is \$150,861, while in the six establishments in which such royalty is not paid the total amount is only \$7,210.

•	Tons of 2,240 pounds.		
Elements of cost.	Cost of 705,401.	Average cost of one.	
Labor	\$462, 236	\$0. 655 , 059	
Officials and clerks. Supplies and repairs. Taxes.	41, 315 120, 219 158, 071	. 170 . 224	
Total	781, 841	1. 108	

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[Seven establishments gave the amount paid for insurance; the aggregate of these makes the sum credited to this item below. Five reported that they had no insurance. Seven establishments reported that there was no expenditure for interest, and for five the agents of the Department failed to obtain a statement. Six establishments gave the amount charged to depreciation; the aggregate of these makes the sum below. Six reported that nothing was charged to this item. Two establishments gave the amount paid as royalty to the owners of the soil; the aggregate of these makes the sum below. Ten reported that nothing was paid as royalty to the owners of the soil. The aggregate entered in the first column below are, of course, apportioned in the second column among the whole twelve establishments.]

Insurance		
Interest. Depreciation of value of plant. Royalty paid to owners of the soil	4, 593	.006
Royalty paid to owners of the soil	95, 225	. 133
Total	100, 927	. 143

SUMMARY OF COST OF IRON ORE IN ONE ESTABLISHMENT IN GREAT BRITAIN.

[This summary is drawn is from the preceding sub-tables A to G. The establishment is number 92, being the only iron ore mine in Great Britain from which a report was obtained. As may be seen, the period covered is six months in the year 1889.]

	Tons of 2,	Tons of 2,240 pounds.		
Elements of cost.	Cost of 612,104.	Average cost of one.		
Labor	\$238, 507 6, 570	\$0. 389 .011		
Eupplies and repairs	101, 528 4, 344	.1 06 .007		
Total	850, 949	. 573		

SUMMARY OF COST OF THEORETICAL ELEMENTS IN THE ABOVE.

[This establishment reported that it had no insurance, that there was no expenditure for interest, and that nothing was charged to depreciation. It gave the amount paid as royalty to the owners of the soil, which is the sum credited to this item below.]

Insurance	l	1
Interest		
Depreciation of value of plant		
Royalty paid to owners of the soil	\$78, 074	\$0.119
Total	72,074	. 119
	10,010	1000

• ·
·

LIMESTONE.



LIMESTONE.

The titles of the table and sub-tables relating to the cost of production of limestone are as follows:

TABLE XI.—Cost of Production of Limestone at Various Quarries in Various States.

- A.—Period covered and quantity of product.
- B.—General statement of cost for the period.
- C.—Elements of cost in one ton of 2,240 pounds.
- D.—Per cent. of each element of cost in one ton of 2,240 pounds.
- E.—Additional cost of certain theoretical elements.
- F.-Additional cost of certain theoretical elements in one ton of 2,240 pounds.

The table requires no particular analysis, the statements being brought out with sufficient clearness; the general plan is the same as for the preceding industries. No complete analyses of the limestone were furnished, but the percentage of carbonate of lime has been reported generally. In a few of the smaller establishments no charge was reported for administration, the work being very slight, and probably performed by the foreman, whose wages were charged under labor.

TABLE XI.—COST OF PRODUCTION OF LIMESTONE AT VARIOUS QUARRIES IN VARIOUS STATES.

A.—PERIOD COVERED AND QUANTITY OF PRODUCT.

Es.		Period covered.	Period covered.			Limestone quarried.			
tab- lish- ment	Locality.	Cerminal dates.	Days of	Carbon- ate of Tons of 2,24					
ber.			time.	lime (per cent.)	Total.	Per day.			
1 2 3 4 5 6 7	United States	July 1, 1889, to Dec. 31, 1889 Jan. 1, 1882, to Dec. 31, 1849 Jan. 1, 1889, to Dec. 31, 1880 Jan. 1, 1889, to Dec. 31, 1880 Jan. 1, 1889, to Dec. 31, 1889 Jan. 1, 1889, to Dec. 31, 1889 Mar. 28, 1889, to Sept. 28, 1889	130 250 243 253 220 211 (a)	97. 0 97. 0 95. 3 95. 3 97. 0 96. 5 (a)	45, 500 162, 500 86, 607 80, 324 13, 278 15, 250 21, 344	350 650 356 317 60 72			

TABLE XI.—COST OF PRODUCTION OF LIMESTONE AT VARIOUS QUARRIES IN VARIOUS STATES—Continued.

B .- GENERAL STATEMENT OF COST FOR THE PERIOD.

[Establishments numbers 1 to 6 are in the United States; number 7 is in Great Britain.—Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included.]

Establishment number.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total
	\$10, 175 38, 125 24, 956 25, 642 3, 906 7, 336 8, 299	\$1,800 5,200 1,200 250	\$2,730 8,113 1,649 426 742 875 821	\$50 500 25 25	\$14, 756 51, 938 27, 805 26, 316 4, 673 8, 236 9, 126

C .- ELEMENTS OF COST IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 6 are in the United States; number 7 is in Great Britain.—Insurance, interest, depreciation of value of plant, charges for freight of product to place of free delivery, and royalty to the owners of the soil are not included.]

Establishment number.	Labor.	Officials and clerks.	Supplies and repairs.	Taxes.	Total
	\$0. 224 - 225 - 288 - 319 - 294 - 481 - 389	\$0,039 .032 .014 .003	\$0,060 .050 .019 .005 .056 .058 .038	\$0.001 .003 .002 .001	\$0, 324 , 320 , 321 , 327 , 253 , 540 , 427

D. -PER CENT. OF EACH ELEMENT OF COST IN ONE TON OF 2,940 POUNDS.

[Establishments numbers 1 to 6 are in the United States; number 7 is in Great Britain.]

Establishment number.	Labor.	Officials and clerks.	Supplies. and repairs.	Taxes.	Total
	69. 13 73. 44 89. 72 97. 55 83. 52 80. 07 91. 10	12.04 10.00 4.36 .92	18.52 15.62 5.92 1.53 15.91 10.74 8.90	.31 .94	100 100 100 100 100

E. ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS.

[Setablishments numbers 1 to 6 are in the United States; number 7 is in Great Britain.]

	Additional cost.				
Hatabilahmant number	Insurance.	Interest.	Deprecia- tion of value of plant.	Royalty to owners of soil.	Total
CONTRACTOR OF THE PROPERTY OF				\$3, 880 4, 49a	\$3, 89 4, 60
######################################				1,217	

TABLE XI.—COST OF PRODUCTION OF LIMESTONE AT VARIOUS QUARRIES IN VARIOUS STATES—Concluded.

F.-ADDITIONAL COST OF CERTAIN THEORETICAL ELEMENTS IN ONE TON OF 2,240 POUNDS.

[Establishments numbers 1 to 6 are in the United States; number 7 is in Great Britain.]

	Additional cost per ton.				
Establishment number.	Insurance.	Interest.	Depreciation of value of plant.	Royalty to owners of soil.	Total.
1					
3		•••••••••		\$0, 045 . 056	\$0. 043 . 050
7				.057	. 057

FREIGHTS.

The following freight rates are for pig iron, steel, etc., from various points of production in the United States to points and ports of delivery, and from ports in Great Britain to various ports in the United States. These rates have been gathered from official sources, but to what extent, under particular circumstances, rebates or deductions are granted, or whether granted at all, the Department has no knowledge.

As an illustration of the practical working of freight rates with reference to steel rails, the statements of the manager of one of the largest steel companies in the United States may be quoted. He said that the difference in cost of production of steel rails in Chicago, for instance, and in England would not exceed \$3.50 or \$4 per ton, and that the freight rate (\$5 per ton) from Chicago to New York offered a large protection to his company. This manager also prepared the following statement, showing the cost of transportation of steel rails per ton of 2.240 pounds from New York to San Francisco by water:

Lighterage	\$ 0. 50
Insurance	. 45
Three months' interest	. 45
Freight by water	10,00
Total	11.40

The total expenses, then, of transportation from New York to San Francisco is \$11.40, while the latest rate quoted in the table further along (for October 1, 1889) from Chicago to San Francisco is \$17.92. It has, the same manager states, always been cheaper to ship rails from Chicago to New York at \$5 per ton, and then ship them from there to San Francisco, than to ship them directly from Chicago to San Francisco; or, in other words, it is cheaper to ship from Chicago to San Francisco via New York than it is to ship direct. The same gentleman

also prepared the following statements, based upon market values of rails in November or December, 1890.

Price of English rails, per ton, without tariff:	•
At Liverpool	\$ 25.00
At New York	25, 00
At Chicago	30.00
At San Francisco	25.00
Price of English rails, per ton, with tariff:	
At New York	39.00
At Chicago	44.00
At San Francisco	39.00
Price of Chicago rails per ton:	
At Chicago	30.00
At San Francisco	47.92

This gives English rails an advantage of \$8.92 over Chicago rails in the San Francisco market.

It was assumed by this manager, and he claimed to know, that during the greater part of the season ocean steamers and sailing vessels transport ralls as ballast, free of charge, from Liverpool to New York or San Francisco. Others have often made this same statement, and it is given here for what it is worth.

In the following tables the lines by which shipments are made are given in the prefatory notes when known; when there is no statement the facts were not reported.

FREIGHT RATES FROM CHICAGO, ILLINOIS, TO POINTS SPECIFIED.

[The rates are by some one of the following lines: the Baltimore and Ohio railroad, the Chicago and Grand Trunk railway, the Illinois Central railroad, the Lake Shore and Michigan Southern railway, the Michigan Central railroad, the Pittaburgh, Cincinnati, Chicago and Saint Louis railway, the Pittaburgh Fort Wayne and Chicago railway, the Union Pacific railway, the lines of the Chicago and Ohio river traffic association, the lines of the Joint Agents Texas traffic association, or by all lines.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland	Steel rails		
Do	Steel rails	January 9, 1888	4.40
Do	Steel rails	March 5, 1888	4.40
Do	Steel rails	July 6, 1888	2, 60
Do			
Do			
Do		September 16, 1888.	
Do			. 40
Do			
Do			
Do			3.40
Do			
Do			
Boston, Massachusetts, and Port-			
			6. 50
land, Maine.	Steel rails		6. 00
		ALATCH 5, 1888	
<u>D</u> o			5. 20
<u>D</u> o			
Do			6.00
Do			6.00
Do	Steel rails	January 1, 1889	6.00
Do	Steel rails	January 24, 1889	6,00
Do	Steel rails	June 20, 1889	6.00
Do	Steel rails	July 8, 1889	5, 00
Do			6.00
Do	Steel rails	September 16 1880	6.00

FREIGHT RATES FROM PITTSBURGH, PENNSYLVANIA, TO POINTS SPECIFIED.

[The rates are by some one of the following lines: the Pennsylvania railroad, the Pittaburgh, Fort Wayne and Chicago railway, the Pittaburgh and Lake Erie railroad, the Pittaburgh, Cincinnati and Saint Louis railway, Gray's iron (steamboat) line, or the lines of the Transcontinental association.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Saltimore, Maryland	Pig iron	January 1, 1888	82.4
Do Do	Pig iron	January 1, 1888 June 11, 1888	1.8
Do	Pig iron	January 1, 1889 June 27, 1889	2.4
Do Do	Pig iron	June 27, 1889 September 2, 1889.	1.8
Do	Pig iron	January 1, 1890	2.4
Do	Pig iron	January 1, 1888	2. 6
Do	Pig iron	January 1, 1888 June 11, 1888	3.0
Do	Pig iron	August 4, 1888	3. 2
Do	Pig iron	August 21, 1888	8.0
Do	Pig iron	October 17, 1888 January 1, 1889 June 27, 1889	2.4 2.6
Do	Pig iron	June 27, 1889	3.0
Do	Die ison	September 2, 1889.	8.0
Do	Pig iron	January 11, 1890	8.6
Do	Rails	February 28, 1888 .	64.2
hicago, Illinois	Pig iron	March 1, 1889	64.4 2.5
Do	Pig iron	January 4, 1889 May 1, 1889	2.5
Do	Pig iron	September 16, 1889.	1 2.8
<u>Do</u>	Pig iron	September 24, 1889.	2.
<u>Do</u>	Pig iron	November 18, 1889	2.9
Do	Pig iron	July 11, 1890	2.
Do	Steel rails	May 15, 1889 June 8, 1889	2
Do	Steel rails	September 16,1889.	2.
Do	Steel rails	January 1, 1890	2.
Do	Steel rails	June 1, 1890	2.2
incinnati, Ohio	Pig iron	September 24, 1889.	1 2.
Do Do	Steel rails	November 18, 1889. June 11, 1889	2.0
Do	Steel rails:	May 15, 1889	i t
Do	Steel rails	September 16, 1889.	i.
Do	Steel rails	January 1, 1890	1 31.0
ast Saint Louis, Illinois	Pig iron	September 24, 1889	3.
Do	Pig iron	November 18, 1889.	3.9
Do	Steel rails	June 8, 1889 September 16, 1889.	2. 3.
Do	Steel rails	January 1, 1890	1 1
fobile, Alabama Tew Orleans, Louisiana	Rails	January 1, 1890 January 1, 1888	7. 7.
lew Orleans, Louisiana	Rails	January 1, 1888	7.
Do	Rails	1888	1.
Do Do	Rails	January 28, 1889 1889	8.
Do	Rails	1890	i
Do	Pig iron	January 1, 1888	1
Do	Pig iron	January 1, 1888 June 11, 1888	2.
Do	Pig iron	January 1, 1889 June 27, 1889	8.
Do	Pig iron	September 2, 1889	2. 3.
Do	Pig iron	January 1 1890	1
Do	Pig iron	January 1, 1890 January 1, 1888 June 11, 1888	<u> </u>
Do	Pig iron	June 11, 1888	2.
<u>D</u> o	Pig iron	January 1, 1889 June 27, 1889	2.
Do	Pig iron	June 27, 1889	2.
Do	Pig iron	September 2, 1889 . January 1, 1890	2. 2.
Do	Pig iron	January 1, 1888	î.
Do	Pig iron	January 1, 1888 June 11, 1888	3.
Do	Pig iron	August 4, 1888	8.
Do	Pig iron	August 21, 1888 October 17, 1888	3.
Do	Pig iron	January 1, 1889	3. 8.
Do	Pig iron	Juno 27, 1889	1
Do	Pig iron	July 11, 1889	3.
Do	Pig iron	July 22, 1889	2.
1)0	Pig iron	September 2, 1889.	3.
Do	Pig iron	January 1, 1890	3.
circo, California.	Pig iron	January 1, 1890 January 16, 1888	22. 22.
Do	Pig iron	September 1, 1888.	22.
Do	Pig iron	January 1, 1889	25.
Tio	Pig iron	October 1, 1839	25.

a On shipments for Galveston. Texas.
b By Pittsburgh and Lake Eric railroad, to apply on shipments for points beyond Cincinnati, Ohio. П. Ех. 265-18

FREIGHT RATES FROM CHICAGO, ILLINOIS, TO POINTS SPECIFIED-Concluded.

[These are rates stated by shippers as having been actually paid; the dates when or lines by which shipments were made were not reported.]

Destination of freight.	Kind of freight.	Date.	Rate per ten (2,240 pounds).
New York, New York Omaha, Nebraska Philadelphia, Penneylvania Pitteburgh, Pennsylvania Portland, Maine Portland, Oregon Heu Francisco. California Saint Louia, Missouri Savannah, Georgia	Steel rails Steel rails Steel rails Steel rails Steel rails Steel rails Steel rails		\$0.00 8.00 4.22 9.73 6.00 17.92 17.92 1.25 5.73

FREIGHT RATES FROM SCRANTON, PENNSYLVANIA, TO POINTS SPECIFIED.

[The rates are by some one of the following lines: the Central railroad of New Jersey, the Delaware, Lackawanna and Western railroad, or lines of the Transcontinental association.]

Date Manager d			(2, 240 pounds).
Baltimore, Marvland	Rails	April 12, 1889	\$2.00
Chicago, Illinois	Rails	July 25, 1887	4.00
Do		September 26, 1887	4.00
Do	Rails	May 16, 1888	4,50
Do		June 12, 1889	2.61
Do	Steel rails	October 19, 1889	8. 60
Do		October 20, 1889	2.61
Do		January 2, 1890	1. 60
· Do		May 1, 1890	4.00
Do		June 2, 1890	1.55
Do		June 14, 1890	1.65
Do		July 5, 1890	1.00
Do		July 8, 1890	2.60
	Steel rails	September 23, 1890	
Cincinnati, Obio		September 3, 1889.	1.09
The cinuact Onto	Steel rails	January 15, 1890.	2.14
D-	Steel rails	April 26, 1890	2.13
		May 1, 1890	
Do		June 12, 1889	8. 40
East Saint Louis, Illinois			4. 31
_ Do			4. 60
Galveston, Texas (a)	Rails	January 22, 1889	1.60
New York, New York	Icails	May 12, 1887	2.00
<u>p</u> o	Rails	September 15, 1887	2.00
Do		January 20, 1888	2.00
Philadelphia, Pennsylvania	Raila	Angust 22, 1887	2.36
Do	Rails	March 8, 1888	2. 26
Do	Rails	April 16, 1889	1.83
Portland, Oregon, and San Fran- 🤈		January 16, 1888	24. 64
cisco, California.	Pig iron		22. 40
	Pig iron	January 1, 1889	26. 88
Do		October 1, 1889	26. 88
Do		January 18, 1890	26, 84
Do	Steel rails	March 6, 1888	24. 64
Do	.! Steel rails	September 1, 1888.	22, 40
Do	Steel rails	January 1, 1889	20. 16
Do	Steel rails	October 1, 1889	20, 16
Do	Stoel rails	January 18, 1890	20. 16

[&]amp; Via New York and water.

FREIGHT RATES FROM PITTSBURGH, PENNSYLVANIA, TO POINTS SPECIFIED.

[The rates are by some one of the following lines: the Pennsylvania railroad, the Pittaburgh, Fort Wayne and Chicago railway, the Pittaburgh and Lake Eric railroad, the Pittaburgh, Cincinnati and Saint Louis railway, Gray's iron (steamboat) line, or the lines of the Transcontinental association.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland	Pig iron	January 1, 1888	82.4
Do	Pig iron	January 1, 1888 June 11, 1888	1.80
Do	Pig iron	January 1, 1889	2.4
Do	Pig iron	January 1, 1889 June 27, 1889	2.4 1.8
Do	Pig iron	September 2, 1889.	2.0
Do	Pig iron	January 1, 1890	2.4
Boston, Massachusetts	Pig iron	Tanuary 1, 1000	3, 6
Do	Pig iron	January 1, 1888 June 11, 1888	
Do	Pig iron	August 4 1999	3.0
Do	Pig irou	August 4, 1888 August 21, 1888 October 17, 1888 January 1, 1889 June 27, 1889	3. 2
Do	Pig iron	August 21, 1886	3.0
	Pig tron	October 17, 1888	3.4
Do	Pig iron	January 1, 1889	3.6
Do	Pig iron	June 27, 1889	3.0
Do	Pig iron	September 2, 1889.	3.6
Do	Pig iron	January 11, 1890	3.6
Cairo, Illinois	Rails	February 28, 1888 .	a 4. 2
Do	Rails	March I. 1889	a4.4
Chicago, Illinois	Pig iron	January 4, 1889 May 1, 1889	2.5
Do	Pig iron	May 1, 1889	2.5
Do	Pig iron	September 16,1889.	2.5
Do	Pig iron	September 24, 1889.	2.5
Do	Pig iron	November 18, 1889	2.5
Do	Pig iron	July 11, 1890	2.5
Do	Steel rails	July 11, 1890 May 15, 1889	2.4
Do	Steel rails	June 8, 1889	2.2
Do	Steel rails	September 16,1889.	2.4
Do	Steel rails	Tannary 1 1900	2.4
Do	Steel rails	January 1, 1890	2.7
Do		June 1, 1890	2.7
Cincinnati, Ohio	Pig iron	September 24, 1889.	2.0
Do	Pig iron	November 18, 1889.	2.0
Do	Steel rails	June 11, 1889	1, 6
Do	Steel rails:	May 15, 1889	1.6
Do	Steel rails	September 16, 1889.	1.6
Do	Steel rails	January 1, 1890	81.8
East Saint Louis, Illinois	Pig iron	September 24, 1889	3.0
Do	Pig iron	September 24, 1889 November 18, 1889.	3.0
Do	Steel rails	June 8, 1889	2.7
Do	Steel rails	September 16, 1889.	3.1
Do	Steel rails	January 1, 1890	3.5
Mobile, Alabama	Rails	January 1, 1890 January 1, 1888	7.8
New Orleans, Louisiana	Rails	January 1 1888	7.8
Do	Rails	1888 January 28, 1889	3. 2
Do	Rails	January 28 1880	8.2
Do	Rails	1889	3.2
Do	Rails		
Do New York, New York	Pig iron	1890	4.0
New lork, New lork	Pie ion	January 1, 1888 June 11, 1888	3.0
Do	Pig iron	June 11, 1888	2.4
Do	Pig iron	January 1, 1889 June 27, 1889	3.0
Do	Pig fron	June 27, 1889	2. 4
Do	Pig iron	September 2 1889.1	3.0
Do Philadelphia, Pennsylvania	Pig iron	January 1, 1890 January 1, 1888 June 11, 1888	3.0
Philadelphia, Pennsylvania	Pig iron	January 1, 1888	2. 6
Do	Lig won	June 11, 1888	2.0
Do	Pig iron	January I, 1889 June 27, 1889	2.6
Do	Pig iron	June 27, 1889	2.0
Do	Pig iron	September 2, 1889	2,6
Do	Pig iron	January 1, 1890 January 1, 1888 June 11, 1888	2.6
Portland, Maine	Pig iron	January 1 1888	3.6
Do	Pig iron	June 11 1888	3, 0
Do	Pig iron	August 4, 1888	3. 2
Do	Pig iron	Angust 21 1898	3.0
Do	Pig iron	Ootober 17 1000	
Do	Pig iron	August 21, 1888 October 17, 1888 January 1, 1889	3.4
		Tune 27 1600	3.6
Do	Pig iron	June 27, 1889	3.0
Do	Pig iron	July 11, 1889	3.6
Do	Pig iron	July 22, 1889	3.0
Do	Pig iron	Sentember 2 1880	3. 6
Do	Pig iron	January 1, 1890 January 16, 1888 March 6, 1888	3.6
Do Portland, Oregon, and San Fran- [Pig iron	January 16, 1888	22. 1
cisco, California.	Pig iron	March 6, 1888	22.1
Do	Pig iron	September 1, 1888.	22.4
Do	Pig iron	January 1, 1889	25, 7
170			

a On shipments for Galveston, Texas.
b By Pittsburgh and Lako Eric railroad, to apply on shipments for points beyond Cincinnati, Ohio.

11. Ex. 265——18

FREIGHT BATES FROM PITTSBURGH, PENNSYLVANIA, TO POINTS SPECIFIED—Concluded.

[The rates are by some one of the following lines: the Pennsylvania railroad, the Pittsburgh, Fort Wayne and Chicago railway, the Pittsburgh and Lake Erie railroad, the Pittsburgh, Cincinnati and Saint Louis railway, Gray's iron (steamboat) line, or the lines of the Transcontinental association.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Portland, Oregon, and San Fran- ciaco, California. Do Do Do Do Do Savannah, Georgia (6)	Steel rails Steel rails Steel rails Steel rails Steel rails Steel rails Steel rails	January 16, 1888 March 6, 1888 September 1, 1888 January 1, 1890 October 1, 1880 June 18, 1890	, \$25, 76 22, 18 22, 18 22, 40 19, 04 19, 04 19, 04

& Via sea from Baltimore, Maryland.

FREIGHT RATES FROM BESSEMER, PENNSYLVANIA, TO POINTS SPECIFIED.

[The rates are by the Pennsylvania railroad.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland		January 1, 1889	\$1.50
Do		January 1, 1890	1. 59
Boston, Massachusetts	Steel rails	January 1, 1889	3, 60
Do		August 2, 1889	3. 20
Do		October 9, 1889	3, 60
Do		January 1, 1890	3.60
Do			3,00
Do	Steel rails		3, 60
Jersey City, New Jersey	Steel rails	January 1, 1889	2. 17
Do	Steel rails	January 1, 1890	2.17
Philadelphia, Pennsylvania		January 1, 1889	1.79
Do	Steel rails	January 1, 1890	1.79
Portland, Maine			3. 60
Do	Steel rails	August 6, 1889	3, 20
Do		October 9, 1889	3, 60
Do	Steel rails	January 1, 1890	3, 60
Do	Steel rails	June 27, 1890	3, 00
Do	Steel rails	July 11, 1890	3, 60
Do	Steel rails	July 22, 1890	3, 00
Do	Steel rails	September 2, 1890	3, 60

FREIGHT RATES FROM BIRMINGHAM, ALABAMA, TO POINTS SPECIFIED.

[These are rates stated by shippers as having been actually paid; the dates when or lines by which shipments were made were not reported.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
altimore, Maryland	Pig iron		84.
oston, Massachusetts	Pig iron		4.
harleston, South Carolina	Pig iron		2.
hicago, Illinois	Pig iron		<u>.</u>
incinnati, Ohio	Pig iron		2.
alveston, Texas	Pig iron		Ť.
lobile, Alabama	Pla leon		ż
ow Orleans, Louisians	Die inen		2
ow York, New York	Die in-		4.
maha. Nebraska	Die inen		3.
MADA, NODIASKA	Pig iron		5.
hiladelphia. Pennsylvania	Pig iron		4.
ittaburgh. Pennsylvania	Pig iron		4.
ortland, Oregon	Pig iron		11.
avannah, Georgia	Pig iron		2.
aint Louis, Missouri	Ply iron		3.

FREIGHT RATES FROM NEWPORT, ENGLAND, CARDIFF, WALES, AND SWANSEA, WALES, TO POINTS SPECIFIED.

Destination of freight.	Kind of freight.	Date.	Rate per tou (2,340 pounds).
New Orleans, Louisians Do New York, New York	Iron	January, 1888 May, 1889 Jánuary, 1889	\$2.19 2.92 2.01

FREIGHT RATES FROM LONDON, ENGLAND, TO POINTS SPECIFIED.

[The rates are by the steamships of the Atlantic transport company.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland	Steel rails	June, 1890 January, 1890	\$1.46 1.70

FREIGHT RATES FROM SWANSEA, WALES, TO POINTS SPECIFIED.

[The rates are by the steamships of the Atlantic transport company.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland Do Do New York, New York Philadelphia, Pennsylvania Do Do	Tin plate	May 1, 1889 May 1, 1890 January, 1890 January, 1888 May, 1888	3. 41 8. 41 2. 19 3. 89 3. 65

FREIGHT RATES FROM BARRON, ENGLAND, TO POINT SPECIFIED.

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland	Iron ore	1890	\$2.19

FREIGHT RATES FROM HULL, MIDDLESBOROUGH, AND NEWCASTLE-UPON-TYNE, ENGLAND, TO POINTS SPECIFIED.

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
New York, New York		January, 1888 June. 1888	\$2. 60 3. 6
Do	Alkali	November, 1888 January, 1889 March, 1889	3, 8; 2, 9; 3, 0-
Do Do	Alkali Alkali	August, 1889 December, 1889	8. 10 3. 10 3. 10
Do	Alkali		2. 30 2. 60 3. 0
Do Do	Ferro-manganese	January, 1888 November, 1888	2. 1: 2. 8
Do Do Do	Ferro-manganese	December, 1888 March, 1889 June, 1889	3. 41 2. 5. 2. 01
Do New Orleans, Louisiana	Spiegeleisen	November, 1889 January, 1890	2. 2: 2. 2: 3. 8:

FREIGHT BATES FROM LIVERPOOL, ENGLAND, TO POINTS SPECIFIED.

[The rates are by some one of the following lines, or by lines of steam or sailing ships the names of which were not reported: the Inman line, the White Star line, the American line, or the Cunard steamship company.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds)
ew York, New York	Pig iron	January 7, 1888	\$1.
Do	Pig iron	August 15, 1888	. 1
Do	Pig iron	August 22 1888	1.
Do	Pig iron	August 22, 1888 September 12, 1888	2
Do	Pig iron	August 20, 1890	2.1
Do	Pig iron	October 8, 1890	2
Do	Pig iron	October 8, 1890 January, 1888	1.
Do	Pig iron	Fahrnary 1888	i
Do	Pig iron	February, 1888 July, 1888 October, 1888	1
Do	Pig iron	October 1888	1
Do	Pig iron	November, 1888	î
Do	Pig iron	January, 1889	1 1.
Do	Splegeleisen	February, 1889	
Do	Spiegeleisen	March 1880	
Do	Pig iron	March, 1889 1888, '89, and '90	
Do	Steel rails	1888, '89, and '90	1
Do	Tin plate	1000, 09, and 90	1
Do	Control of the contro	1888, '89, and '90 1888, '89, and '90 1888, '89, and '90	2
Do	Cotton ties	1888, 89, and 90	1
Do	Spiegeleisen Bar iron and steel	1888, 89, and 90	1
Do	Bar iron and steet	1888, '89, and '90	2
Do	Steel rails	1888, '89, and '90	1
Do	Tin plate	1888	1
Do	Tin plate	1889 and 1890	1
Do	Cotton ties	June, 1888	1
Do	Cotton ties	July, 1888	1
Do	Cotton ties	August, 1888	1
Do	Cotton ties	September, 1888	1, 83 to 2
Do	Cotton ties	October, 1888	1.83 to 2
Do	Cotton ties	July, 1889	1
Do	Cotton ties	August. 1889	1
Do	Cotton ties	June, 1890 May, 1888	1
Do	Hoop iron	May, 1888	1
Do	Hoop iron	Tale 1888	1
Do	Ray iron	November, 1888	2
Do	Hoop iron	December, 1888	1
Do	Hoop iron	November, 1888 December, 1888 January, 1889	i i
Do	Hoop iron	February, 1889	i
Do	Hoop iron	March, 1889	î
Do 1	Hoop iron	April, 1889	1.83 to 1
Do	Hoop iron	May 1889	1.00.00
Do	Bar iron	May, 1889 July, 1889	2
Do	Bar iron Hoop, sheet, and bar iron	May, 1890	2.01 to 1
Do	Hoon sheet and bariron	June, 1890	2.01.10.1
Do	Tip plate	January, 1888	2
Do	Hoop, sheet, and bar iron Hoop, sheet, and bar iron Tin plate Tin plate	February, 1888	2
Do	Tin plate	March, 1888	2
To	Tin plate	April, 1888	2
Do	Tin plate	Mar 1999	
Do	Tin plate	May, 1888 June, 1888 July, 1888	1
Do	Tin plate	Tule 1999	
Do	Tin plate	July, 1000	1 02 40 0
Do	Tin plate	August, 1888 September, 1888	1.83 to 2
1)0	Tin plate	Ostober 1999	2
Do	Tin plate	October, 1888	1 92 10 2
Do	Tin plate	November, 1888 December, 1888	1. 83 to 2
Do	Tin plate	Tonuero 1930	1.83, 1.58, and 1
[] 국고의 이름 2시 : [] [] [] [] [] [] [] [] [] [Tin plate	January, 1889	1.46 to 1
Do	Tin plate	February, 1889	1
Do	Tin plate	March, 1889 April, 1889	1
Do	Tin plate	April, 1889	1
Do	Tin plate	May, 1889	1
Do	Tin plate	June, 1889	1. 22 to 2
Do	Tin plate	July, 1889	1. 34 to 1
Do	Tin plate	August, 1889	1
Do	Tin plate	July, 1889 August, 1889 September, 1889	1.58, 1.46, and 1.
Do	Tin plate	October, 1009	1, 38 (0 1
	Tin plate	November, 1889	1.
Do	Tin plate	December, 1889	1.
Do	Tin plate	January, 1890	1, 46 to 1.
Do	Tin plate	February, 1890	1, 22 to 1,
Do	Tin plate	March, 1890	1.22, 1.34, and 2
Do	Tin plate	April, 1890	2.01 to 1.
Do	Tin plate	April, 1890 May, 1890	1.46 to 1
. Do	Tin plate	June, 1890	2.01, 1.70, and 1.
100	Pig iron and spiegeleisen	January, 1888	
Do	Pig iron and spiegeleisen	February, 1888	1
Do	Pig iron and spiegeleisen	February, 1888 March, 1888 April, 1888	1.
Do	Pig iron and spiegeleisen	April 1888	i
APR	Pig iron and spiegeleisen	May, 1888	1 2

FREIGHT RATES FROM LIVERPOOL, ENGLAND, TO POINTS SPECIFIED-Continued.

[The rates are by some one of the following lines, or by lines of steam or sailing ships the names of which were not reported: the Inman line, the White Star line, the American line, or the Cunard steamship company.]

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
New York, New York	Pig iron and spiegeleisen Pig iron and spiegeleisen	July, 1888 August, 1888 October, 1886	\$0.9
Do	Pig iron and spiegeleisen	August, 1888	1.4
Do	Pig iron and apiegeleisen	October, 1888	1. 46 to 1. 3
Do	Pig iron and spiegeleisen	October, 1888. November, 1888. February, 1889. March, 1889. April, 1889. May, 1889. June, 1889. July, 1889. August, 1889. September, 1889.	. 1.2
Do	Pig iron and spiegeleisen	February, 1889	9
Do	Pig iron and spiegeleisen	March, 1889	1.2
Do	Pig iron and spiegeleisen Pig iron and spiegeleisen	April, 1889	.0
Do	Pig iron and spiegeleisen	May, 1889	
Do	Pig iron and spiegeleisen	June, 1889	9
Do	Pig iron and spiegeleisen	July, 1889	1, 22 to . 9
Do	Pig iron and spiegeleisen	August, 1889	1. 22 to 1. 1
Do	Pig iron and spiegeleisen.	September, 1889 October, 1889	0.97, 1.10, and 1, 2
Do	Pig iron and spiegeleisen	October, 1889	1. 22 to 1. 1
Do	Pig iron and spiegeleisen	November, 1889 December, 1889	1.1
Do	Pig iron and spiegeleisen	December, 1889	1.1
Do	Pig iron and spiegeleisen		1. 10 to 1. 2
Do	Pig iron and spiegeleisen	February, 1890 March, 1890 April, 1890 May, 1890 June, 1890	1.1
Do	Pig iron and spiegeleisen	March, 1890	1.1
Do	Pig iron and spiegeleisen	April, 1890	1.4
Do	Pig iron and spiegeleisen	May. 1890	1.3
Do	Pig iron and spiegeleisen	June. 1890	1. 22 to 1. 1
Dooston, Massachusetts	Pig iron	February, 1888 July, 1888	
Do	Pig iron	July. 1888	1.6
Do	Pig iron Steel blooms and slabs	September, 1888	
Do	Tin plate	1888	1.34 to 1.
Do	Tin plate	1889	
Do	Tin plate	1890	1.34 to 1.4 1.22 to 1.3
Do	Tin plate Pig iron and spiegeleisen Pig iron and spiegeleisen	1890 1890	
Do	Pig iron and spingalaisan	March 1888	
Do	Pig iron and spiegeleisen	April 1988	
Do	Pig iron and spiegeleisen	May 1998	
Do	Pig iron and aniegolaison	November 1999	a ri
Do	Pig fron and apiegeleisen	Japane 1880	
Do	Pig iron and aniegaleisen	Fahrnary 1880	
Do	Pig iron and spiegeleisen	February, 1889 August, 1889	. 73 to .
Do	Pig iron and enjoyalaisan	Santambar 1899	
Do	Dig from and apiegoleisen	December 1889	1
Do	Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen Pig iron and spiegeleisen	September, 1889 December, 1889 January, 1890	1.
Do	Pig iron and spiegeleisen	April 1990	1.
Do	Pig from and aniagalaisan	Mag 1800	
Do	Hoon sheet and har iron	Tannann 1999	1.1
Do	Pig iron and spiegeleisen Hoop, sheet, and har iron Hoop sheet, and bar iron	April, 1890 May, 1890 January, 1888 November, 1888 December, 1888	1. 83 to 1.
Do	Hoop, sheet, and bar iron	December 1888	1.00 1.0
Do	Hoop, sheet, and bar iron	January, 1889	2.
Do	Hoon sheet and har from	February, 1889	2,
Do	Hoop, sheet, and bar iron Hoop, sheet, and bar iron	March 1890	1.
Do	Hoop, sheet, and bar iron	March, 1889 April, 1889	î.
D ₂	Hoop, sheet, and bar irou	May, 1889	î.
Do	Hoop sheet and har iron	Tone 1990	1.
Do	Hoop, sheet, and bar iron Hoop, sheet, and bar iron	Cantamban 1990	i.
Do	Hoop, sheet, and bar iron	October, 1889	i.
	Hoop, sheet, and bar iron	Verember 1990	i.
Do	Hoon sheet and har iron	November, 1889 January, 1890	i.
Do	Hoon alreat and har from	Fabruary, 1890	î.
Do	Hoop, sheet, and bar iron Hoop, sheet, and bar iron Hoop, sheet, and bar iron	February, 1890 April, 1890 May, 1889	2
Do	Spiegeleisen	Mar 1990	1,
De Maryland	Spiegeleisen	June, 1889	1.
Do	Spiegeleisen	June, tees	1
Do	Pig iron	1888, '89, and '90 1888 and 1889	1
Do	Iron ore	1888 and 1889	1.
Do	Iron ore	1890	1.
Do ew Orleans, Louisiana	Tin plate Pig iron Pig iron	1888, 89, and 90	1
w Orleans, Louisiana	Pig iron	March, 1889	1.
Do	Pig iron	1888, 89, and '90	1.
170	Cotton ties	1890	-3.
D9	Cotton ties	October, 1000	2. 3.
Do	Cotton ties	April, 1889	
Do	Cotton ties	October, 1889	2.
Do	Cotton ties	April, 1890	3.
Do	Steel rails	April, 1888	2.
Do	Steel rails	October, 1889 April, 1888 October, 1888 April, 1888 January, 1890 January, 1890 January, 1886 August 15, 1888 August 25, 1888	2.
Do	Steel rails	April, 1889	2
Do Hadelphia, Pennsylvania	Steel rails	January, 1890	1.
iladelphia, Pennsylvania	Pig iron	January, 1888	1.
Da	Pig iron	August 15, 1888	1.
Do	Pig iron	August 25, 1888	1.
Do	Pig iron Pig iron Pig iron		
Do	Pig iron	February, 1889 April, 1889	1.
Do	The Paris of the P	A 11 1000	1

FREIGHT BATES FROM LIVERPOOL, ENGLAND, TO POINTS SPECIFIED—Concluded.

[The rates are by some one of the following lines, or by lines of steam or sailing ships the names of which were not reported: the Iaman line, the White Star line, the American line, or the Cunard steamship company.]

Destination of freight.	Kind of freight	Date.	Rate per ton (2,240 pounds).
Philadelphia, Pennsylvania	Hoop iron	1888, '89, and '90	83.43
Do	Steel slabs	1888, '80, and '90	1.96
Do	Tin plate	1868	2.43
Do	Tin plate	1969	2.01
Do	Tin plate	1890	2. 43
Galveston, Texas	Pig fron	April, 1888	3.04
Do	Pig iron	October, 1888	2.43
Do		April, 1839	8. 04
Do	Pig iron	October, 1889	2. 43
Do		April, 1890	3 64
Do		1888, '89, and '90	
De	Cotton ties.	1888, '89, and '90	
Do		1888, '89, and '90	4.87
San Francisco, California.	Finished iron and steel	May. 1888	8. 52
Do		June 21, 1888	9. 12
De		Angust, 1888	9. 14 8. 52
		January 30, 1889	7. 30
Do			
Do		May 5, 1889	5. 47
Do	Finished iron and steel	August 29, 1889	6.08
<u>D</u> o		Octo ier, 1889	6. 39
<u>D</u> o		October, 1889	
<u>D</u> o		June, 1890	4.87
<u>D</u> o		June, 1890	
Do		June. 1868	8.70
Do		October, 1888	8. 03
<u>Do</u>		January, 1889	
Do		March, 1889	8. 03
Do	Pig iron	June, 1889	8.03
Do	Pig iron	July, 1889	4, 58
Do	Pig iron	November, 1889	6. 83
Do	Pig iron	January, 1890	6.69
Do		June. 1890	4. 01
Do		October, 1888	9. 37
Do		February, 1889	
Do		May. 1889	6, 26
Montreal, Canada		July and August.	1.70
		1888.	2
Do	Steel rails	July and August, 1889.	1. 58
Halifax, Nova Scotia	Steel rails	September, 1888	2.68
Saint John, New Brunswick	Steel rails	September, 1888	2. 68

FREIGHT RATES FROM GLASGOW, SCOTLAND, TO POINTS SPECIFIED.

[The rates are by some one of the fellowing lines or by a line of sailing ships the name of which was not reported: the Alien line, the Anchor line, the State steamship company, or Donaldson & Brother's steamships.]

Destination of freight.	Kind of freight.	Date.	Rate per ten (2,240 pounds).
Baltimore, Maryland	Steel rails, steel, and iron Plates and bars	1888	\$1. 83 to \$1. 96 1. 70 to 1. 83
Do	Plates and bars	1889	1.70 to 1.83
Do	Plates and bars	1890	1.70
Do	Pig iron	1888, '89, and '90	1 68 to 1 06
Do	Dia issue	1888	1 99 to 1 70
Do	Steel plates.	1888. 1888. January, 1888. February, 1888.	1. 58 to 1. 95 1. 32 to 1. 70 2. 43 to 3. 04
Do New York, New York	Pig iron	January, 1888	2.43 to 3.04 1.28
Do	FIR HOR seems seems seems	February, 1888 March, 1888	1.84
Do	Pig iron	March, 1888	1.70
<u>D</u> o	Pig iron	May. 1888	1.22
Do	Pig iron	Mantamhap Issue	. 85
Do Do	Pig iron	December, 1888 January, 1889 February, 1889 March, 1889	. 61
Do	Pig iron	Pahanana 1980	.61
Do	Pig iron	March 1200	.61 .61
Do	Pig fron	May, 1889	.73
Do	Pig ron	September, 1889	.85
Do	Pig irou	November, 1889	. 49
Do	Pig iron	December, 1889	. 24
Do	Pig iron	January, 1890	.61
Do	Pig iron	April, 1890	.49
Do	Pig iron	Asprember, 1889 November, 1889 December, 1889 January, 1890 April, 1890 May, 1890 May, 1898	. 24
Do	Slabs	March, 1888	1.95
Do	Slabs	May, 1888	1.70
Do	Slabs	September, 1888 December, 1888 January, 1889 March, 1889	1.83 1.83
Do	Slabs	Terrore 1990	1.79
Do	Slabs	March 1990	1.70
Do	Slaba	May, 1889	1.58
Do	Slabe	September, 1889	1.34
Do	Slabs	November, 1889 December, 1889	1.34
Do	Slabe	December, 1889	. 78
<u>D</u> o	Slabs	January, 1890 April, 1890 May, 1890 1888, '89, and '90 1888, '89, and '90	.78
<u>D</u> o	Slabs	April, 1890	. 61
Do	Slabs	May, 1890	.61
Do	Steel sheets, plates, and bars	1888, 89, and 90	2.43
	Steel billete	1888	1. 83 1. 58
Philadelphia, Pennsylvania Do	Pig iron	1888 1889 and '90 1888 and '89	1.70
Do	Slabe	1888 and '89	1.70 to 2.43
Do	81abs		1.70 to 2.43 .85 to 1.10
Do	Steel Diates	1 1888, '89, and '90	
Do		1888	10.71
Do	Stool sheets and plates	1888. January 1, 1889 July 1, 1889	10.71
Do	Steel sheets and plates Steel sheets and plates	July 1, 1889	8. 52
Do	oteel speets and diates	January 1, 1890	5.47
	Pig iron	1888. January 1, 1889. July 1, 1889. January 1, 1890	9. 12 1. 02
Do	Pig iron	January 1, 1889	8. 08
Do	Pig iron	January 1, 1890	4.87
20	1	January 1, 1000	2.01
FREIGHT RATES FR	OM BENI-SOOEF, EGYPT,	TO POINTS SPEC	CIFIED.
Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
	_		
Baltimore, Maryland	Iron ore	January, 1888 March, 1888	15 11
Do	Iron ore	March, 1888	8. 53
Do	Iron ore.	December, 1889 March, 1888	2.71 to 2.77
Philadelphia, Pennsylvania Do	Iron ore	July, 1888	8.16
Do	Iron ore	August, 1888	8. 16 to 8. 28
Do	Iron ore	February, 1890	2.25 to 2.37
FREIGHT RATES	FROM BILBAO, SPAIN, TO	POINTS SPECIF	TED.
Destination of fraight	Kind of freight.	Date.	Rate per ton
Destination of freight.	Wind of Height.	Date.	(2,240 pounda).
Non-York Non-37 1	7	T	40 00 4 00 00
New York, New York	Iron ore	January, 1800	\$2.66 to \$2.93
Philadelphia, Pennsylvania	Iron ore	September, 1888 October, 1888	3,41 8,41
Do	Iron ore	March, 1890	2.64 to 2.93
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PART I.—COST OF PRODUCTION. 281

FREIGHT BATES FROM GARUCHA TO POINT SPECIFIED.

FREIGHT RAT	ES FROM GARUCHA TO	POINT SPECIFIE	
Destination of freight.	· Kind of freight.	Date.	Rate per ton (2,240 pounds).
Philadelphia, Pennsylvania	Iron ore	October, 1888	81.3
Do	Iron ore	November, 1888	. 7.3
Do	Iron ore	December, 1888	3.89 to 4.
Do	Iron ore	May, 1889	1.41 to 3.5
Do	Iron ore	June, 1889	3. 28 to 3. 5
		J Gallet , 2000	4.20.00.0
FREIGHT RATES	FROM HUELVA, SPAIN, 2	TO POINT SPECIF	TED.
Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Philadelphia, Pennsylvania	Iron ore	April, 1888	#3.9
Do	Iron ore	January, 1889	3.7
Do	Iron ore	February, 1889	3.8
Do	Iron ore	March, 1889	4.3
Do	Iron ore	April, 1889	4.
Do	Iron ore	December, 1689	8. (
Do	Iron ore	March, 1890	. 8.1
FREIGHT RATES	FROM MACRI, TURKEY,	O POINT SPECIA	TIED.
Destination of freight.	Kind of freight.	Date.	Rate per ton (2,210 pounds).
Baltimore, Maryland	Iron ore	March, 1889	94.3
FREIGHT RATES F	ROM MARBELLA, SPAIN,	TO POINT SPEC	IFIED.
Destination of freight.	. Kind of freight.	Date.	Rate per ton (2,240 pounds).
	7	35> 1000	
Philadelphia, Pennsylvania	Iron ore	March. 1888	\$3.80 to \$3.8
Do	Iron ore		3.4
Do	Iron ore		3.
. Do			3.
Do			8.
<u>D</u> o			8.16 to 3.
Do	iron ore	February, 1889	3.
Do	from ore	March, 1889	3.
Do		April, 1889	3.
<u>p</u> o	Trom ore	May, 1869	2.65 to 3.
Do	Iron ore	June, 1889	3. 28 to 3.
Do		August, 1889	2
<u>D</u> o	iron ore	September, 1889	2.56 to 2.
Do Do	Iron ore	November, 1889	2.
<u>D</u> o	Iron ore-	December, 1889	2.93 to 3.
<u>D</u> o	Iron ore	January, 1890	2.
<u>D</u> o	Iron ore	February, 1890 March, 1890	2.74 to 3.
Do	Iron ore	June, 1890	.2.
Do	Trou ore	Julie, 1850	Z. .
FREIGHT RATES FI	ROM MAZARRON, SPAIN,	TO POINTS SPEC	EIFIRD.
Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Rollimore Marriand	Tron ore	April, 1888	
Baltimore, Marylaud	Iron ore	June, 1888	\$3. 1
Philadelphia, Pennsylvania	Iron ore	March, 1888	8. 35 to 3.
Do	Iron ore	October, 1889	8.35 10 3.
FREIGHT RA	TES FROM MILOS TO PO	INT SPECIFIED.	
Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).
Baltimore, Maryland	Iron ore	December, 1889	\$3.4
	<u> </u>	L	

REPORT OF THE COMMISSIONER OF LABOR.

FREIGHT BATES FROM PERAZUELOS TO POINT SPECIFIED.

Kind of freight.	Date.	Rate per ton (2,240 pounds).
Iron ore	December, 1839 January, 1899	\$2.98 3.04
		Kind of freight. Date. Iron ore

FREIGHT RATES FROM PORMAN TO POINTS SPECIFIED.

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).		
Baltimore, Maryland	Iron ore	January, 1988	\$3.41		
Do	Iron ore	February, 1888	2. 98		
Do	Iron ore	August, 1888	3. 10		
Do	Iron ore	December, 1888	2. 92		
Do	Iron ore	January, 1889	2.92 to 3.04		
Do	Jron ore		2.41		
Do	Iron ore		2.60		
1)0	Iron ore		2.65		
Do	Iron ore		2.43 to 2.54		
Do	Irun ore	December, 1889	2. 56 to 2. 80		
Do					
	Iron ore		2.74		
Do	Iron ore		2.56 to 2.60		
Do	Iron ore		2, 25 to 2, 37		
Philadelphia, Pennsylvania	Iron ore		3, 51		
Do	Iron ore		3. 16 to 3. 41		
Do	Iron ore	March, 1888	3.80		
Do	Iron ore	December, 1888	3, 16		
Do	Iron ore	June, 1889	2.80		
Do	Iron ore		2.43		
De	Iron ore		1.04		
Do	Iron ore		2.49 to 2.8		
Do	Iron ore		2.11		
		April, 1890	2.11		
<u>Do</u>	Iron ore				
Do	Iron ore	June, 1890	2. 37 to 1. 8 0		

FREIGHT RATES FROM SERPHO TO POINTS SPECIFIED.

Destination of freight.	Kind of freight.	Date.	Rate per ton (2,240 pounds).		
New York, New York	Iron ore	March, 1890	\$3. 38		
Philadelphia, Pennsylvania	Tron ore	Fahrnary 1698	3. 04 3. 65		
Do	Iron ore	July, 1848	3.65		
Do	Iron ore	December, 1888	3.71		
Do			3. 80 3. 77		
Do			1.26		
Do	Iron ore	December, 1889	8.47		
Do			2. 92 to 3. 16		
Do	Iron ore	June, 1890	3, 00		

PART II.

TIME AND EARNINGS—EFFICIENCY OF LABOR.



TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS. A.—Pig Iron: Northern district of the united states. ESTABLISHMENT No. 9.

•	Work-	dwith		ctual co	mdition	a for peri	od.	works	ition if nen had nnous yment,
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Conse-
		daily earn- ings.	em- ploy- és.	Total	Aver- age.	Total.	Aver- age.	en- ployés.	average earnings per em- ployé.
Elacksmiths	313 313	\$2.00 2.50	1 5	59 190	59 38	\$117 475	\$117 95	0, 19 0, 61	\$621 783
Total	813	2.38	6	249	42	592	99	0.80	744
Blacksmiths' belpers	313 313	1.35 1.60	1 3	33 178	33 59	44 285	44 95	0.11 0.57	417 501
Total	313	1.56	4	211	53	329	82	0.68	4F8
Bolernakers Bolernakers' helper	365 365	2.50 1.50	1	24 9	12 9	C0 14	30 14	0.07	913 568
Cagranea	365 365	2. 20 2. 35	1	241 159	241 159	528 374	528 374	0.65 0.44	800 850
Total	365	2. 25	2	400	200	902	451	1,10	823
Carpenters	313 313	2.00 2.50	1	85 183	83 183	169 457	169 457	0.27 0.58	622 Te2
Total	313	2.334	2	268	134	626	313	0.85	221
Cinder susppers Cinder suspper and belper	365 365	1.983 2.09	1	445 258	223 258	884 539	412 539	1. 22 0. 71	725 763
Cinder suspects and laborers.	363	1.50	1	234 325	83 83	5.0 629	125 Co	£ 69	549 706
In	165	1.73	4	575	144	1, 005	31	1, 57	CS
Cinder supper and ore piler. Engineer Engineer and labover Cognoser and machinist	365 365 365 365	1.50 1.55 1.57 1.57	1 1 1	133 17 362 321 363	133 17 362 321 355	257 31 814 933 509	257 51 614 962 500	F33 F38 F38	783 1, 886 871 1, 964 781
Plan bollin	365 365 365	1.80 2.00 2.10	12 13	411 1, 150 1, 455	206 97 112	1.55 1.57 1.678	250 19 : :26	1 39 1 13 1 13	271 271 271
	265	10	=:	1,65	112	£:2	==	£ 30	741
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		2.76				1.375		- 4	1 410

TIME AND EARNINGS.

Part II deals with the time employed, the earnings gained, and the efficiency of the workmen engaged in production. The subject first taken up is time and earnings. Of the 618 establishments represented in the tabulation of cost of production in Part I, copies of the payrolls were made in ninety-nine cases, and these served as the basis of the tables which are to follow. As a rule the period for which these rolls were copied was the same as that for the cost of production. Quite generally this period is for one year.

No necessity seemed to exist for collecting these data from all the 618 establishments, as what has been gathered and presented adequately represents, without doubt, all the existent conditions as to wages and duration of employment. The following statement shows the distribution of these ninety-nine establishments among the several industries:

NUMBER OF ESTABLISHMENTS TABULATED IN TIME AND EARNINGS.

Industry and locality.	Estab- lish- ments tabu- lated.
Pig iron:	
Northern district of the United States	13
Southern district of the United States	2
Great Britain	2
Total	21
MUCK BAR IRON: United States	
Great Britain	i
TotalFinished Bar Iron:	
United States	9
Great Britain	i
Total	
TOTAL	8
United States	
Continent of Europe	3
Total	
TOTAL MILLETS:	•
United States	1
STERI. HLOOMS:	
United States	
Continent of Europe	•
MIXED IRON AND STEEL:	_
United States	9
Continent of Europe	3
Ustav Dilwid	
Total	17
287	,

TAKE WEL-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. A-Fig Bron: BORTHERE DISTRICT OF THE UNITED STATES.—Continued.

	ESTAI	RLISHY	ENT	Zo 9 -	Ceeds	ded.				
	Work	Actual daily otra- ing, or daily					Condition if workmon had continuous cupleyment.			
Georgetie:		rate Bearcut to	Dif-	Dic.	Days of work done.				Becom	Conse
		daily eara- ings.	ploy.	Total	Aver-	Total	Aver-	ployee	STORES	
Mana carrier and on breaker. Januariera.	. 365	LO	23	151	45	1,781	\$385	0.41 2.61	585	
(Application)	365 365	2 00 1 L00	1	163				1.45	730 580	
\$1000 MANUAL	365		2		165	513	257	0. 57	894	
Toppmany Will famous	· 313	5.25 2.44			99	1,531	517 55	. 62	1, 540	
THE INT	25			3 13		56	=	4.95	863 271	
Tax - MANN	265 265	. 10 119	1 3	#6 195	43 65	 	136	0.11 0.53		
200	365	2.66	4	233	30	430	122	0.64	700	
Maramadial	223	2.00	1	1	. 1	3	3	4.99	130	
The reportation of		263	310	25, 736	23	E 2.	100	72.18	734	
		STABLI	SHVI	ZZI Z	. 10.					
Martine	1.3	£2.19 2.43	1	91 331	331	8199 519	\$250 530	1.5	985.1 785	
Jana	E2	237	:	<u>C</u>	:::		***	1.35	7.62	
Andrewind dipto	13	1.59 1.62	2 1	392 179	191 173	573 576	35	. E	470 567	

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785 139 1 559 255 375 665 138 AGC 2.25 2 673 307 1.375 689 1.65 AGC 2.77g 1 579 175 1.389 1.58 1.58 suppose to the production of local Technique and Francisco via the besides of no number than animal viale the sendences of page 50 to be

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TABLE XIV .- Summary of Actual and Theoretical Time and Earnings by Industries.

A .- Pig iron.

B .- Muck bar iron.

C .- Finished bar iron.

D.-Steel ingots.

E.-Steel billets.

F .- Steel blooms.

G .- Steel rails.

H .- Mixed iron and steel.

J.—Bituminous coal.

K.-Coke.

L.-Iron ore.

Table XII presents the facts in detail for each establishment separately through the several industries from A to Y. Table XIII summarizes these facts by occupations, and Table XIV summarizes them by bringing the establishment totals together in each industry. The establishment numbers refer to establishments numbered the same in Part I, relating to cost of production. Thus establishment number 10, the second here tabulated as to time and earnings, is the identical number 10 appearing in the cost of production tables, pages 35 to 60. The numbers omitted are, of course, those of the establishments before referred to for which copies of payrolls were not made.

Under working days in the period appears the number of possible working days during the whole period for each class of employés. This period may exceed the number of days of actual running time for the establishment, and it will always do so when, during the period, the establishment has been temporarily closed. In different industries these possible working days may differ, although the period of time be the same, because in some industries, as in pig iron, the establishment usually runs every day in the period, while in others, as in iron ore mining, it closes on Sundays. Likewise in different occupations in the same establishment they may differ, because in pig iron, for example, the regular furnace employés work every day, while the repair men, laborers, and various others, as a rule, work on week days only.

The columns showing the actual condition for the period are referred to a little further along and such explanation made as seems needed; they embody the actual results taken from the payrolls. The last two columns of the table, however, do not represent actual conditions, but theoretical ones. The first of these two columns shows the number of employés that would be necessary (usually a fractional number of men), working continuously through the period, to perform the actual days of work given; and the second shows the consequent average earnings for the period of one such employé. The essential object of the comparison here is to show the great difference between the actual force and the necessary force in establishments, and between what men are actually paid during a fixed time (as, say a year) and what they are theoreti-

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TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

A .- Pig Iron: NORTHERN DISTRICT OF THE UNITED STATES-Continued.

ESTABLISHMENT No. 10-Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	n for perio	d.	works	ition if nen bad innous syment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day		Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Average	Total.	Aver- age.	em- ployés.	earnings
Mason and stoveman	365	\$1.983	1	286	286	\$567	\$567	0.78	8724
Masons' helpers	313 313 313 313 313	1.25 1.35 1.50 1.60 1.75	1 1 1 1 2	52 301 17 15	52 301 17 15 11	06 407 23 24 57	60 407 25 24 19	0. 17 0. 96 0. 03 0. 05 0. 11	397 423 469 501 541
Total	313	1.38	7	418	60	579	81	1, 34	434
Moulders	365 365	1. 418 1. 65	1	130 135	130 135	194 223	184 223	0.36 0.37	517 603
Total	365	1. 534	2	205	133	407	204	0.73	561
Pipe fitters	313 313 313	1. 63 2. 00 2. 25	1 1 1	104 50 9	104 50 9	170 96 20	170 96 20	0. 33 0. 16 0. 03	512 601 896
Total	313	1.75)	3	. 163	54	286	95	0.52	549
Policemen	365	1.48	8	418	52	618	77	1, 15	540
Sample boys	365 365	.50	2 1	177 135	89 135	80 101	45 101	0.48 0.37	184 273
Total	365	. 61	3	312	104	190	63	0. 85	22:
Sample man	365	1.50	1	242	242	363	363	0.66	548
Scrapmen	265 365	1. 64 1. 75	1 4	237 185	237 46	390 323	390 81	0. 65 0. 51	601 637
Total	365	1.69	5	422	84	713	143	1. 16	617
Stock preparers Storeke-per Stoveman Stoveman's helper. Timeke-per	365 365	1.59 1.65 2.00 1.75 1.52	98 1 1 1	3, 061 339 337 351 305	31 339 337 351 353	4, 592 559 655 640 510	47 559 655 640 510	0, 93 0, 92 0, 96	540 60:2 709 666 556
Water boys	365 265	. 75	1 6	213 517	213 86	160 463	1 6 0	0, 58 1, 42	87.4 327
Total	365	. 85 }	7	730	104	623	89	2.00	312
Water tenders	365 365	2.00 1.97	3 1	760 365	253 365	1, 511 720	504 720	2. 08 1. 00	726 720
The establishment		1. 67	507	45, 039	89	a 75, 519	149	127. 65	592

a In addition \$2,667 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 51.

Ordinarily in any industry there will be much difficulty and even impossibility in determining the time of piece workers.

Often certain important employés work in gangs, crews, turns, shops, etc., different industries having different terms. The method of payment is equally various, and is not universally alike in any one industry. The following shows one method of payment for a crew of rollers in a rolling mill.

Let us suppose that work goes on continuously night and day for 54 days each week. Two crews, each working a turn of 12 hours, will be necessary, known respectively as the day crew and the night crew. The composition of each will be about as follows: one roller, one heater, two roughers, two scrapers, one poke-in, two straighteners. These crews alternate in day and night work each week, the crew doing day work one week doing night work the next. A record is kept of the number of pounds of iron rolled by each crew. Let us suppose that wages are paid once in two weeks. These wages are paid to one of the rollers, who is known as the chief roller, and the payrolls of the company show no recognition of the other persons in the crews. The amount paid this chief roller will be a certain sum per ton for the whole amount of finished product. He now proceeds to divide this amount among the men. It is to be presumed that the amount of product of one crew will be somewhat larger than that of the other; so each as considered separately. Of the amount due his own crew he pays onefourth to the heater and one-eighth to each of the roughers. He pays the scrapers, straighteners, and poke-in a fixed sum per day, each class being at a different rate. The other crew is paid off in a similar way, what the heater and rougher gets being based on the product of the crew. He pays the other roller usually a fixed sum per day. After making all these payments, what is left belongs to himself. It may be presumed that the chief roller does not concern himself with keeping a permanent record of these transactions, and as the only record the mill has is of the tons of product of each payment period and the amount paid the chief roller, and as the composition of the crews is changing from time to time, and the number of turns of work in a month varying at different seasons, the difficulty of ascertaining the number of days of work done and the earnings of each person in a year is great. Of course, in the case of piece workers when the time is obtainable, you will have, in a computation for a day, as many rates as you have individuals, which is an embarrassment of exactness.

There are also employes who work by the hour at one occupation, conjoined with piece work at another. Again, a certain class of labor which is performed by the hired workmen of one establishment, in another is let out to a contractor who hires his own help, and the establishment has no record of anything but the amount paid this contractor.

It is apparent that after the tedious labor of copying a payroll has been performed, it may be found that the material is quite incomplete.

No attempt has been made to supply such lacking information by estimates, except in immaterial instances, which are indicated by foot notes. In other words, the tables represent the actual facts, except as the exigencies of statistical treatment have harmlessly modified them in accordance with what follows on the methods of handling the most important of the difficulties referred to. The goodly proportion of employés working at but a single occupation for a single rate of course offers no difficulties. The treatment of other cases is now noted.

An employé found working at two or more occupations has been credite, with his total time and earnings as made at that occupation at which he worked the longest, provided that three-fourths or more of his time was employed at it; also, he has been credited with his total time and earnings as made at the one of any two occupations at which he worked the longest, the daily rates of which were alike or differed not more than 10 cents, provided the time of the two combined was equal to three-fourths of his whole time. When an employé has made less than three-fourths of his time at one occupation, or at two or more, as just noted, he has been credited with his total time and earnings as made at a compound occupation, consisting of the several single occupations, as "cinderman and laborer."

Whenever possible, the actual daily rates paid by employers have been used instead of computed daily earnings. If the employé received the same daily rate of pay throughout the period, that rate, of course, has been used. If he was paid at several rates, the one nearest his actual average daily earnings has been given him, if it differed not more than 10 cents from such actual average daily earnings. If, however, the difference was greater than 10 cents, the actual average daily earnings (the quotient of total earnings divided by total days) has been used as the rate.

For a number of employés working wholly by the piece, no time could be given. In some cases where men were paid by the quantity or by contract, the exact time was obtained and has been used. In other cases, where they were also paid by the quantity or by contract, no exact time could be given by the employers; but in quite a number of these cases it was possible for the special agent to estimate the time on the basis of information furnished by the proprietor or the men. These estimates have usually been accepted and used as being reliable. In the cases of piece workers whose time was given and of all employés for whom no actual daily rate paid was known, the rates used were the actual average daily earnings (the quotient of total earnings divided by total days). Of course in this way a new rate was obtained for each particular case, and for the sake of brevity in the presentation, they were then arranged in groups in such a way that the actual average , daily earnings of each group should be about 25 cents from the group below and above. In the cases previously mentioned where the time was unknown and unobtainable, the tables will show no data for rates, time, and other columns dependent upon the time. In a very few cases,



mostly occupations demanding a high degree of skill, the number of employés will be found lacking, as well as the rates, time, etc. This latter defect arose from the fact that the work was given out to contractors by the company, and nothing beyond the total sum paid to such contractor was shown by the books of the establishment. From what has been said it is apparent that the rate multiplied by the days of work done will not always produce exactly the earnings.

With these explanations we are prepared to understand and use the tables. Table XII takes up by number each establishment for which payrolls were copied. For example let us look at establishment number 10 (pages 296, 297, and 298), which is a blast furnace in the northern district of the United States. It shows for each occupation in that establishment the working days in the period covered by the investigation, the actual daily earnings or daily rate nearest to the average daily earnings, the number of different employés that have been employed in the establishment, together with the total days of work done, the average days of work done, the total earnings, and the average earnings for the period covered, and then, in the two right-hand columns of the table the number of employes that would be necessary to do the work if they should work continuously through the period, and the consequent average earnings for each of such employes for the period. To take a single case from Table XII-fillers. There were employed in estab. lishment number 10, an establishment working 365 days, 94 different employés as fillers. Their actual daily earnings for the days worked were on an average \$1.58; they worked 7,219 days in all during the whole period, or an average for each filler of 77 days. The total earnings of the whole 94 were \$11,398, or an average for each of \$121 during the year. Now, 19.78 men, mathematically speaking, if they had. worked continuously for the whole period that the establishment was running, would have accomplished the same results that the 94 different fillers accomplished, and each one would have earned on an average \$576. This illustration clearly shows how Table XII is to be used.

Table XII is followed by Table XIII, which is a summary of it by occupations. The figures used in this table are always the totals for each occupation, as given in Table XII. The column of actual daily earnings, or daily rate nearest to average daily earnings, will generally, in Table XIII, show average daily earnings, as the two or more rates so often appearing in Table XII are here reduced to a single statement. In comparing the earnings in any occupation at different establishments the length of the period covered must be noted, and the industry itself should not be overlooked. While in some cases a name may stand for the same duties through the different industries, in general comparisons cannot be safely made beyond the limits of an industry. "Mixed iron and steel" is a title of general rather than specific meaning. It is applied to establishments producing a more or less mis-



cellaneous assortment of products, for any one of which it was impossible to obtain statements, either in cost of production or in the time employed and carnings of workmen. The name, therefore, may cover half a dozen different though allied products. The basis of the theoretical condition in each table is, of course, variable, every establishment having one of its own, which is the number of working days in the period. The consequent average earnings per employé can be directly compared only when this basis is the same.

Table XIV brings together the establishment totals of Table XII for more convenient comparison of establishment results. illustration, looking at its first page, subdivision A, pig iron, we find that establishment number 10 is situated in the northern district of the United States; that the length of the period covered by our returns is one year; that the actual average daily earnings in that establishment, as a whole, were \$1.671; that there were 507 different individual employes who did an amount of work represented by the total of 45,039 days, or an average for each individual employé of 89 days; that the total earnings of the whole 507 individual employés, working on an average of 89 days each, was \$75,519, giving to each employé an average actual earning of \$149. Looking at the last two columns of the table. it will be seen that if, instead of 507 individual employés working during the period an average of 89 days each, 127.65 employés had been kept at work continuously throughout the whole period, they would have accomplished the same results and would have earned \$592 each.

The Department is inquired of from time to time as to the rate of wagen paid in different employments in the different states of the Union, generally, it would appear, with the expectation that a definite answer can be made, and quite exact figures given, for instance, for middlers in New York or carpenters in Ohio, or at least that somewhere within the realm of accomplishment just such definite results mis waiting only to be gathered and presented in tabular columns in a way to mattle the matter of rates of wages for every occupation in every state and country of the civilized world for the present generation. Raffaction seems hardly needed to show that such figures do not and cannot exist. Large collections from important establishments anguand in the principal industries of different countries, if made subatunifully at the same time and exactly on the same basis, would prove the neuront possible approach to such information, and would be far havand what has yet been done, and an attempt at this is in contemplation by the Department. Meanwhile the results here presented may his sumpled as much more exact in detail and more comprehensive in many than could be carried out in such a large investigation; since and a work would have to be confined to rates of wages mainly, while this movers in addition the actual days of work done by and earnings of until workman. But with regard to the repeated inquiry what is the till of wages in such or such an occupation these tables are ample

to show that specifically no answer can be made. For instance, if we examine Table XIII, where those pursuing like occupations in different establishments in different states are brought together, we shall see how various are the daily rates of pay for similar work. As an example, let us look at the blacksmiths. For convenience of comparison, the following cases which run from the lowest to the highest rate of any given for the United States are extracted from Table XIII and are here presented:

THE VARYING WAGES OF BLACKSMITHS IN THE UNITED STATES.

Work-	Actual daily earnings, or daily rate		Actual	Condition if workm had continous em ployment.				
days in the period.	Jeeraen Operade	Different	Days of v	Fork done.	Ear	nings.	Necessary	Conse- quent aver-
	daily earnings.	emplo yés .	Total.	Average.	Total.	Average.	employés.	age carn- ings per employé.
313 313 313 313 313 313 313 313 313 313	\$1. 20 1. 83 1. 84 1. 97 2. 08 2. 184 2. 25 2. 25 2. 28 2. 40 2. 43 2. 75	23 29 29 51 26 15 1	249 511 610 2,442 157 228 661 68 560 249 2022 924 204	125 170 303 271 79 25 132 68 280 42 202 185	\$298 935 1, 124 4, 810 314 485 1, 445 153 1, 316 592 485 2, 250 808	\$149 312 562 534 157 52 289 153 658 99 485 450 808	0.80 1.63 1.95 7.80 0.50 0.70 2.11 0.22 1.79 0.80 0.65 2.95	\$375 578 577 617 626 633 684 704 736 744 752 762 860
313 313 313 313	2, 751 2, 631 2, 081 3, 60	1 5 5 1	201 833 879 310	201 171 176 310	552 2, 418 2, 625 1, 120	553 484 525 1, 120	0. 64 2. 73 2. 81 0. 99	860 887 935 1, 131

The distribution of the establishments among different states from which the instances of blacksmiths shown above are drawn is omitted in all tables in this volume for reasons given in the introduction, but the statement can be made that the seventeen cases are distributed through ten states as follows: five are in Pennsylvania, three in New York, two in Illinois, and one each in Alabama, Wisconsin, Virginia West Virginia, Missouri, Ohio, and Indiana. If other occupations are studied it will be found that in a like way a wide range of rates of pay exists. If the instances had all been drawn from a single state, while the diversity might not have been so great, it would still have been sufficiently striking to show that no such thing as a fixed rate of pay in any occupation exists anywhere in the United States. This, of course, does not mean that for all the workmen in an occupation there is no diference between Massachusetts and North Carolina, or Wisconsin and Florida, or between other states.

Tables XII, XIII, and XIV now follow:

TABLE XEE.—ACTUAL AND THEORETICAL TIME AND EARNINGS. A.—Pig Iron: Northern district of the united states. ESTABLISHMENT No. 9.

8		Week	- CHARLES	A	etual ec	milition	for peri	od.	Ance:	rien I est and mote estern.
Jeougadien		Charme.	to	Diff-	Days	of done.	Earni	ngs	Nerva-	Come-
			daily man- ings	pioy-	Total	Average.	Total.	Aver-	System em-	Janeser Janeser Marianta
Nime in married and a con-		318	\$2,00 2.50	1 5	59 190	59 38	\$117 475	\$1.17 \$5	1.0	1000 765
twisk	- 101110	313	1.38	6	249	42	592	39	1.10	The
Him want has trailwis	h	318	1. 35 1. 60	1 2	33 178	33 59	44 285	44 95	15	340
finial		318	1, 36	4	211	53	329	82	1.0	49
in a maket a haipet		, 165 366	2, 30 1, 50	1	24 9	12 9	C0 14	30 14	1.47	30
e agriculture	44.03.0	765 760	2.20 2.35	1	241 159	241 159	528 374	274 274	0. 90 E. 44	gov. eca
& heaped	444.9	366	2, 254	2	400	200	902	452	23	-
who were	**	.413 314	2.00	1	85 183	85 183	160 457	149 457	4.39	25
I wie'		318	2.334	2	268	134	626	312	4.65	=
In last a minut met	selvet	180	2. 1885 2. 00	2	445 258	223 258	884 529	442 526	15	7
		NAME OF	1, 30	3	250 325	83 325	376 629	(5) (5)	1 5	541 Tel
		.44	1, 73	•	575	144	1, 005	==:	1.57	3
Control of the Contro	erion	i.	1. W 4. 00 2. 25 4. 97 1. 93	1	133 17 362 321 265	321	257 51 814 953 509	#1.4 952	1 # 1 15 1 # 1 %	
·· !le.		1777 1777 1775	1. 40 1. 1.0 2. 1.0	2 12 13	411 1, 150 1, 435	206 97 112	777 2,291 3,670	329 19: 236	13	
		دره.	ي ن ي	27	3, 025	112	6, 138	227	š. 28	3.
		.u.	1 143	. 1	7	7	15	:5	1.12	2
. ,		ب ند. در.	1, 41 1, 53 1, 66	1.0 6 2	1, 362 1, 566 593	105 228 296	2, 190 2, 63 5 1, 219	1429 610		<u>بر</u> 12
		دري. ديقا.		21	3, 320	15#	6, 044	2:6	1. 15	•
		.01	, i		220	226	452	482	1 5	-3
,	•	High Life	1, 164	•	*#3 190	14 6 190	1, 028 38d	257 386	: 3	10
		169	ړيه .۱		172	154	1, 416	25G 162	1.3	\$10
		401	1 %	1	اندا افک	103	1 62 743	743	L V	-
		Pis	F 30		Mai	. 65	1, 200	1, 200	- 2 20	<u>-:</u>
			1.10	. 4			وبي ريف	,		

ESTABLISHMENT No. 9-Continued.

	Work	Actual daily earn- ings, or daily	A	etual co	ndition	for peri	od.	works	ition if nen had inuous yment
Occupation.	days in the period.	rate	Dif.	Day work		Earn	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Average.	em- ployés.	average earnings per em- ployé.
Helpers	365	\$2, 49	9	468	52	\$1, 165	\$129	1,28	\$909
Helpers and laborers	365 365 363	1.66 2.044 2.14	1 3	296 68 882	74 68 294	492 139 1, 886	123 139 629	0.81 0.19 2.42	607 746 780
Total	365	2.02	8	1, 246	156	2, 517	315	3. 42	737
Helper and metal carrier Helper and ore piler Keepers Keeper and laborer	365 365 365 365	2. 381 1. 874 3. 25 2. 705	2	232 8 a 162 248	232 8 81 248	558 15 526 671	553 15 263 671	0. 64 0. 02 0. 44 0. 68	870 684 1, 185 988
Laborers	365 365 365 365 365 365	1.00 1.25 1.35 1.40 1.50 2.00	1 25 47 9	281 281 222 1,405 583 21	43 281 9 30 65 21	362 300 1, 966 874 43	44 362 12 42 97 43	0. 12 0. 77 6. 61 3. 85 1. 60 0. 06	373 470 493 511 547 747
Total	365	1, 405	84	2, 555	30	3, 589	43	7. 01	513
Laborers and metal breakers	365 365	1. 61½ 1. 85	8 2	850 622	106 311	1, 373 1, 151	172 576	2. 33 1. 70	590 675
Total	365	1.71	10	1,472	147	2, 524	252	4.03	626
Laborers and metal carriers	265 265 265 265	1, 60 1, 93 2, 12 2, 36	912229	224 44 361 349	112 22 182 175	358 85 772 824	179 43 386 412	0.61 0.12 1.00 0.96	583 705 774 862
Total	365	2.08	8	981	123	2, 039	255	2,69	759
Laborers and ore breakors Laborer and ore piler Laborer and stove cleaner Laborer and stove tender Laborer and water tender	365 365 365 365 365	1.57 1.50 1.55 2.11 1.87	12 1 1 1 1	615 16 20 324 298	51 16 20 324 298	969 24 31 685 558	81 24 31 683 558	1. 68 0. 04 0. 05 0. 89 0. 82	575 548 566 772 683
Masons	313 313	2.00 3,20	1 9	17 259	17 29	33 829	33 92	0. 05 0. 83	608 1,002
Total	313	3. 12}	10	276	28	862	86	0,88	978
Master masons	313 313	2, 00 5, 00	1	6 37	· 6	12 185	12 185	0.02 0.12	626 1, 565
Total	313	4. 58	2	43	22	197	99	0.14	1, 434
Mechanic	313	2.00	1	71	71	143	143	0, 23	630
Metal breakers	265 265 365	1. 79 2. 00 2. 10	2 2 4	566 34 586	283 17 147	1, 014 69 1, 225	507 35 306	1. 55 0. 09 1. 61	654 741 763
Total	265	1.94)	8	1, 186	148	2, 308	289	3. 25	710
Metal carriers	365 365 365	2.75 2.824 3.00	6 1 12	214 24 1, 036	36 24 86	579 68 3,073	97 68 256	0. 59 0. 67 2. 84	988 1, 034 1, 083

² The work done by keepers appears inadequate for the quantity of product shown on page 35.

ESTABLISHMENT No. 49-Concluded.

	Work	Actual daily earn- ings, or daily		ctual or	editie	a fot peri	od.	Condition if workman had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Diff	Day work	e of dose.	Earn	Earnings.		Conse- quent	
		dally earn- logs.	piog-	Total.	Aver-	Total.	Aver-	ployés.	per em- ployé.	
Keepers	363	\$1.80	2	518	259	\$932	\$406	1.0	\$657	
Laborers	213 213 213 213	1.10 1.15 1.25 1.25	4 2 12 12	188 43 900 2,867	47 24 75 239	209 54 1, 129 3, 793	53 27 94 316	0,60 0,15 2,88 9,16	348 352 393 414	
Total	313	1.29	39	4,003	133	5, 183	173	12.79	405	
Stableman	365	1.15	1	257	237	411	411	0.98	420	
Stockers	263 263	1.25 1.35	3 4	825 1, 061	275 263	1,029 1,432	346 356	2.26 2.91	450 493	
Total	365	1.31	7	1,886	269	2, 471	353	5.17	478	
Teamsters (with team)	313	2.13	2	46	23	144	72	0.15	980	
The establishment		1.47	114	21, 464	188	a 31, 530	277	60. 73	520	

ESTABLISHMENT No. 53.

				1		- 1	- 1	- 3-1	
Blacksmith	155	1.60	1	166	16G	\$115 283	\$415 286	1.07	\$388 250
Cagemen	181	2.00	2	252	176	703	352	1. 94	361
Corposier	155	2.50	1	149		373	373	0. 96	388
Cladermen	16L	1. 73	13	1, 034	P4 -	1, 800	150	5.71	313
Cindermen and fillers	181	1.52	2	23	12 :	25	18 -	0. 13	375
!	181	1. 58	4	50	13	73	20	0. 25	284
Cindermes and metal carriers.	181 161	2. 121 2. 68	2 1	185 i	93 153	893 410	197	1. 02 0. 85	385 486
						'			
Total	181	2.37	3	338	113	808	268	1. 87	434
Coke-dust man	151	1.40	1	179	179	251	251	0. 90	234
Engineers	141	2. 25	2	832	166	746	373	1. 83	407
-	181	3. 25	1	183	182	592	592	1.01	589
Total	181	2. G0}	3	514	171	1, 338	416	2.84	471
Fillers	181	1. 20	2	9	8) 2 i	6	0.05	241
	181	1.40	32	3, 057	96	4, 283	134 (;	16.89	254
i_	181	1.53	2	291	146	447	224 (1. 61	271
Total	181	L 411	36	3, 057	93	4, 742	132	18. 55	256
Fillers, bottom	1#1	1.70	16	2, 378	149	4, 028	252	13. 14	307
Fillers, top	181	2.10	•	GGL	1:5	1, 3×5	346	3, 65	379
Filler and metal carrier	141	1.65	1	147	147	243	243 +	0.81	290
Filler and scraper	151	1. 551	1	47	47	73	• 73	0. 26	261
Feremen	191	2. 30	1	183	183	458	463	1.01	430
	181	3.00	1	182	132	545	546 (1.01	543
Total	181	2.76	2	365	183	1, 001	501	2. 02	496

s. The sarnings here shown are for one year. The statement for this establishment on page 51 is for nine months only.

ESTABLISHMENT No. 10-Continued.

	Work-	Actual daily earn-ings, or daily	A	ctual co	ndition	o for perio	xi.	works	ition if nen had inuous syment.
Occupation.	ing days in the period.	rate nearest to	Dif- ferent	Day:	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	sary em- ployés.	earnings per em- ployé.
Fillers	365 365 365 365	\$1.50 1.55 1.60 1.65	8 36 45 5	194 3, 165 3, 398 462	24 88 76 92	\$292 4, 924 5, 427 755	\$37 137 121 151	0. 53 8. 67 9. 31 1. 27	\$549 568 581 590
Total	365	1. 58	94	7, 219	77	11, 298	121	19. 78	576
Fillers, top	365 365	1. 8P1 2. 00	2 1	606 111	303 111	1, 143 221	572 221	1.66 0.30	688 727
Total	365	1.90	3	717	239	1, 364	455	1. 96	694
Fillers and ironmen biller and kerpers' helper Fillers and laborers Fillers' helpers Fillers' helper and laborer Fillers' helper and stock preparer.	365 365 865 365 365 365	1. 64 1. 59 1. 52 1. 75 1. 60 1. 64	3 1 8 3 1 1	853 114 402 272 314 80	118 114 50 91 314 80	570 181 612 475 502 131	193 181 77 158 502 131	0. 97 0. 31 1. 10 0. 75 0. 86 0. 22	595 586 537 637 584 596
Firemen	i	2.00	2	619	310	1, 207	604	1.70	712
Foreman, laborers	365 305 365	1. 971 2. 25 2. 63	1 1	159 345 365	159 345 365	312 776 960	312 776 960	0. 44 0. 95 1. 00	716 821 960
Total	365	2. 35	3	869	290	2, 048	683	2. 39	860
Foreman, machinery. Foreman and weighman Founder. Hot-cinder men. Hot-cinder men and laborers. Iron men and laborers. Iron men and stock preparer Iron piler. Keepers Keeper and laborer.	305 365 365 365 365 365 365 365	4.66 1.854 6.78 1.50 1.414 1.76 1.47 1.63 2.15	1 1 10 4 17 8 1 1 2	365 189 59 1, 038 861 2, 868 663 65 3 5584 25	365 189 59 104 215 169 83 65 8 292 25	1, 700 351 400 1, 538 1, 220 5, 046 975 106 5, 1, 220 43	1, 700 351 400 154 305 297 122 106 5 610 43	1. 00 0. 52 0. 16 2. 84 2. 36 7. 86 1. 82 0. 18 0. 01 1. 60 U. 07	1, 700 676 2, 478 541 517 642 537 596 600 703
Koepers' helpors	365 365	1.75 1.90	7 2	1, 932 677	276 339	3, 337 1, 266	477 633	5. 29 1. 83	630 683
Total	365	1.76	9	2, 609	290	4, 603	511	7.14	644
Keepers' helper and laborer Keepers' helper and stock preparer.	365 363	1.50 1.56	1	58 25 1	58 251	87 392	87 392	0. 16 0. 60	548 570
Laborers. Laborer and machinist. Laborers and scrapmen Laborers and stock preparers. Laborer and weighman	365 365	1. 25 1. 40 1. 57 1. 28 1. 37}	100 1 4 31 1	5, 062 10 316 1, 317 16	51 10 79 42 16	6, 393 14 496 1, 820 22	64 14 124 50 22	16. 17 0. 03 0. 87 3. 61 0. 04	306 438 573 504 501
Machinists	213 313 313 313	2. 00 2. 25 2. 45 2. 75	1 1 2 1	8 842 543 4	342 272 4	770 1,331	6 770 666 11	0. 01 1. 09 1. 73 0. 01	703 761 862
Total	313	2.37	5	892	178	2, 118	424	2.84	743
Machinists' helpers	313	1. 60}	2	89	45	143	72	0.28	503
Masons	313 313 313 313	2, 25 2, 40 3, 334 3, 62		16 23 12 825	16 12 6 325	36 55 40 1, 178	36 28 20 1, 178	0, 05 0, 07 0, 04 1, 04	704 748 1, 043 1, 133
Total	813	<u>'——</u>	- 6	376	63	- —	218		

Lance Mil.—A Trick and The Charles Trick and Lance Mills Continued.

A.—Physical Representation of the Internal Representation of the Continued of the Continue

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TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

A.—Pig Iron: NORTHERN DISTRICT OF THE UNITED STATES—Continued.

ESTABLISHMENT No. 22.

Actual Condition if daily carnworkmen had Actual condition for period. continuous employment. ings, daily Working days in the rate Occupation. Days of work done Dog res Earnings. Conse-Difto Nanes quent feren daily earnings ploy earn-ings. Total. Total. ployés. per emés. age. age. ployé. 300 312 300 104 2660 0. **96** 1. 00 \$660 2689 407 136 408 Bricklayers..... 313 8.00 4.00 2 8 2 6 32 0. 01 0. 03 939 4 1 254 Total 3. 80 10 10 1 38 0. 04 1, 189 4 3, 106 254 108 183 291 Cindermen and iron handler... Cinderman and laborer..... 8. 51 0. 70 0. 30 0. 50 1.55 17 183 4, 808 283 365 365 1. 62 1. 48 1. 40 1. 51 254 104 411 160 501 541 1 2 1 1 411 160 Cleaners, stack.
Cleaner, stack, and filler
Cleaner, stack, and keepers'
helper. 365 365 365 92 291 261 440 131 521 552 0. 80 0. 05 440 27 1.50 18 18 27 548 Cleaner, stack, and steveman...
Dumpers 554 365 357 357 181 0.98 2.48 566 511 1.55 554 1. 40 1, 271 254 Engineers 1.75 0.02 649 773 1. 519 2.00 97 191 2 12 Total 363 1, 901 9 784 87 1, 565 174 2 14 729 365 1.60 1.50 0. 01 31 6, 236 9. 308 17. 08 201 200 515 Fillers, top..... 365 1.50 1.55 902 1, 349 516 285 103 101 A'M 567 365 1.514 1, 975 1, 305 3. 57 Total 12 109 163 552 365 2, 42 111 361 881 881 1.00 883 Foreman. 364 364 176 80 18 Foreman, iron handlers 863 365 364 176 910 1.00 913 1.55 273 136 26 Foreman and laborer 273 564 5. 50 0. 05 365 2,009 3, 412 620 365 1. 531 1 2 18 28 3414 Keepers 1. 90 **6**95 318 1, 328 697 365 365 2, 158 196 206 3, 329 1, 457 Keepers' helpers i. 55 11 303 5. 91 563 1.65 218 365 1, 57 14 3, 047 4, 786 213 K 33 Total 573 Keepers' helper and laborer ... 365 18 1.38 18 56 0.04 1 13 505 9. 50 0. GL 365 1.41 4, 907 331 516 365 2 224 166 112 539 Moulders 363 1.75 22 23 29 39 0. 06 647 845 2. 25 306 153 639 Total 365 2.22 3 328 100 728 213 0. 90 810 365 1. 55 453 600 117 1. 25 561 1.65 3 641 1.072 357 1.76 610 365 1. 55 722 241 1, 105 366 1. 98 The establishment..... 1. 584 221 26, 700 121 642 371 73. 76

a The earnings here shown are for one year. The statement for this establishment on page 51 is for six months only.

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ESTABLISHMENT No. 32-Concluded.

	Work-	dally		ctual co	ndition	for perio	od. *	Coudition if workmen had continuous employment.	
Occupation.	days in the period.	rate nearest to average	Dif			Earnings.		Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Average.	em- ployés.	carnings
Laborers	313 313 313 313	\$1.00 1.40 1.50 1.60	3 154 26 9	295 5, 233 1, 439 79	98 34 55 9	\$302 7, 375 2, 141 124	\$101 48 82 14	0. 94 16. 72 4. 60 0, 25	\$320 411 466 491
Total	313	1.41	192	7,046	37	0, 942	52	22.51	443
Limestone breakers	365 313 365 313 365 865 313 363	1.50 2.61 1.50 1.60 1.67 1.63 2.40 1.50	1 11 12 2 2 1	751 299 801 352 642 623 9 317	188 209 73 352 321 312 9 317	1, 121 781 1, 182 563 1, 071 1, 010 21 473	2F0 781 107 562 536 505 21 473	2.06 0.96 2.19 1.12 1.76 1.71 0.03 0.87	545 818 539 501 609 592 730 543
The establishment		1.70	321	28, 983	90	a 49, 296	154	83. 73	589

ESTABLISHMENT No. 41.

Carpenter	143	\$2.00	1	142	142	\$284	8284	0.99	\$288
Carpenter and laborer	143	1.35	î	145	145	196	196	1.01	193
Engineers	167	2,00	2	334	167	668	331	2,00	334
Fillers	167	1.50	10	1,441	144	2, 162	216	8, 63	251
Fillers, top	167	1.65	2	335	168	553	277	2.01	276
Foreman	167	2, 25	1	169	169	379	379	1.01	375
Iron barrow man	167	1.65	1	78	78	129	123	0.47	276
Iron movers	167	1. 371	1	130	130	186	186	0.78	239
and the state of the state of	167	1, 50	6	857	143	1, 268	211	5. 13	247
	167	1. 65	2	316	158	521	261	1.89	275
Total	167	1.51	9	1, 303	145	1, 975	219	7. 80	253
Iron mover and moulders'	167	1.57	1	167	167	262	262	1.00	262
Keepers	167	1.85	2	328	164	606	303	1.96	309
Laborers	143	1. 124	19	794	42	913	48	5, 55	164
	143	1.25	25	2, 593	101	3, 169	127	18. 13	175
Total	143	1.204	44	3, 387	77	4,082	93	23. 68	172
Laborer and slagman	167	1.35	1	134	134	181	181	0.80	
Laborer and stock breaker	167	1.30	1	151	151	196	196	0.00	217
Moulders	167	1. 65	3	331	110	546	182	1, 98	275
Moulders' helpers	167	1.50	2	316	158	474	237	1. 89	251
Ovenmen	167	1.75	2	329	165	577	289	1. 97	293
Slagmen	167	1. 50	7	837	120	1, 255	179	5. 01	250
Stableman	167	1. 621	.1	166	166	270	270	0.99	272
Stock breakers	167	1. 37	11	1, 522	138	2, 093	190	9. 11	230
Timekeeper	167	1. 63	1	167	167	273	273	1.00	273
The establishment		1.454	103	11,782	114	17.161	167	74.21	231

a The earnings here shown include amounts paid a few employes not in the pig iron department, which it was impossible to exclude. The statement for this establishment on page 51 is for pig iron only.

A .- Pig Iron: NORTHERN DISTRICT OF THE UNITED STATES-Concluded.

ESTABLISHMENT No. 83-Concluded.

	Work-	GMIT	Actual condition for period.		×i.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	rate mearest to average	Dif-			Earnings.		Neces-	Conne- quent
		daily earn- ings.	em- ploy- ée.	Total.	Average.	Total.	Aver-	eur- ployés.	earnings per em- ployé.
Laborers—concluded	79 79 79 79	\$1.00 1.15 1.25 1.87§	1 4 4 2	15 132 232 60	15 23 58 25	\$15 150 296 96	\$15 28 72 48	0, 19 1, 67 2, 94 0, 87	\$78 90 97 100
Total	79	1, 20	\12	464	39	557	46	5. 87	95
Laborers, furnace	79 79	1.10 1.15	1	84 72	84 72	98 83	98 83	1.06 0.91	87 91
Total	79	1.13	2	156	78	176	88	1.97	89
Mechinist Scrapman Slagmen Stableman Stock unloader Teamsters (with teams)	79 92 92 92 79 79	1.65 1.80 1.87 1.15 1.40 8.00	1 4 1 1 2	78 5 363 92 20 151	78 5 91 92 20 50	129 9 679 105 28 458	129 9 170 105 28 151	0, 90 0, 05 8, 95 1, 00 0, 25 1, 91	131 166 172 193 111 237
The establishment		1. 52	48	8, 106	65	a 4, 729	90	35.44	123

ESTABLISHMENT No. 54.

					1			1 1	
Blacksmith	104	\$1.35	1	104	104	\$141	\$141	1.00	8141
Carpenter	104	2.00	1	20	20	40	40	0.19	209
Cinder tappers	122	1. 20	4	419	105	501	125	3, 43	146
Cinder tapper and gutterman. Cinder tapper and laborer	122 122	1.28	1		7	9 50	9 50 S	0.06 0.36	157 139
Cinder tappers' helpers	123	1. 13½ 1. 10	3	216	72	238	79	1.77	134
Conductor	123	1.25	i	94	94	117	117	0.77	153
Out 1000000000000000000000000000000000000	144	1. 20	•	-	-	11.	1 44,	"	103
Engineers	122	1.45	2	129	65	187	94 1	1.06	177
_	123	1.65	1	115	115	190	190	0.94	201
Total	122	1.541	•	241	81	877	126	2.00	189
		1		l		;	l i	1 1	
Fillers, bottom	123	1.20	8	677	85	807	101	5.55	145
Fillers, top	122	1.45	2	235	118	340	170	1. 93	177
Fillers and laborers	123	1.09	11	604	55	662	60	4.95	134
Guttermen		1.40	4	420 231	105	588 335	147	3.44	171
Keepers	122	1.45	3	231	110	883	168	1.89	177
Keepers' helpers	122	1, 20	2	224	112	269	135	1.84	147
	122	1. 30	2	237	119	- 309	155	1.94	159
Total	123	1. 254	4	461	115	578	145	3. 78	153
			۱	٠	٠		ا ــ ا		
Laborers	122	1.00	34	2, 030	60	2, 073	61	16.64	125
Stableman	122 122	1.00	1 1	122 105	122	122 105	122 105		122 122
Weighmen.	122	1.25	2	215	108	268	134		152
Yardmaster	122	1.50	ı ī	122	122	183	183		183
The establishment		1, 124	25	6, 370	75	b 7, 534	86	52.38	144

e In addition \$140 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 52 and 592.

• The carnings shown here and for this establishment on page 52, although for the same length of time, are for different periods.

PART IL.—TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. B.—Pig Iron: SOUTHERN DISTRICT OF THE UNITED STATES. ESTABLISHMENT NO. 95.

	Working	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	d.	works	ition if nen had nuous ywent.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work d		Earni	ngs.	Nones-	Conse- quent
		daily earn- ings.	ploy- és.	Total.	Average.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Brakemen	334 334	\$1.25 1.35	1 2	205 151	205 76	\$256 204	\$256 102	0. 61 0. 45	\$617 451
Total	334	1. 29	3	356	119	460	153	1.06	433
Cinder tappers	334 334 334 334	1.15 1.30 1.40 1.45	10 44 1 2	1,666 236 494	24 38 236 247	281 2, 160 325 716	28 49 325 358	0.73 4.99 0.71 1.48	385 433 460 484
Total	334	1, 32	57	2, 640	46	3, 482	61	7.91	441
Cinder tappers and fillers Cinder tapper and laborer	334 334	1. 164 1. 20	4	79 5	20 5	92 6	23 6	0. 24 0. 01	389 401
Engineers	334 334 334	2.00 2.60 3.25	7 1 1	808 5 28	115 5 28	1, 597 13 91	228 13 91	2. 42 0. 01 0. 08	660 868 1, 086
Total	334	2. 023	9	841	93	1,701	189	2.51	676
Engineer and wiper Fillers Filler, bottom	334 334 334	1.14 1.36 1.334	1 3 1	303 385 3	303 128 3	345 524 4	345 175 4	0.91 1.15 9.01	380 455 445
Fillers, stockhouse	334 334 334	1.00 1.15 1.25	3 190 2	6, 146 615	2 32 308	7, 104 769	2 37 385	0. 02 18. 40 1. 84	334 386 418
Total	334	1. 16	195	6, 768	35	7, 880	40	20. 26	380
Fillers, top	334 334 334	1.75 1.33 1.50	2 1 4	496 3 680	248 3 170	866 4 1,020	433 4 255	1. 49 0. 01 2. 04	583 443 501
Foremen	334 334	2. 00 2. 37	1 2	55 475	55 238	110 1, 125	110 563	0. 16 1. 42	668 791
Total	334	2.33	3	530	177	1, 235	412	1.58	778
Iron handlers	334 334 334	1. 20 1. 50 1. 661	2 3 1	150 228 3	75 76 3	182 348 5	91 116 5	0. 45 0. 68 0. 01	405 510 557
Total	334	1. 40	6	381	64	535	89	1.14	460
Keepers' helpers	334	1.75 1.40	2 15	580 1, 324	290 89	1,011 1,868	506 125	1. 74 3. 99	582 468
Laborers	324 334 334 334 334	1.00 1.10 1.15 1.25 1.35	27 1 4 1	618 76 17 72 72	23 76 4 72 18	628 85 20 90 98	23 85 5 90 25	1. 85 0. 23 0. 05 0. 22 0. 22	339 374 393 418 455
Total	334	1.07	37	855	23	921	25	2.57	360
Laborer and stoveman	334 304 334 334 334	1.215 2.25 1.00 1.271 1.15	1 5	23 4 290 464 356	23 4 58 116 119	28 9 291 592 413	28 9 58 148 138	0. 07 0. 01 0. 87 1. 39 1. 07	407 750 335 426 387
The establishment	=		358	17, 376	49	a 23, 287	65	52, 05	448

a The earnings here shown are for cloven months only. The statement for this establishment on page 52 is for eighteen months.

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. A .- Pig Iron: NORTHERN DISTRICT OF THE UNITED STATES-Concluded.

ESTABLISHMENT No. 83-Concluded.

·	Work-	Actual daily earn-ings, or daily		ctual co	od.	Condition if workmen had continuous comployment.			
Occupation.	days in the period.	rate nearest to average	Dif	Days work	of done.	Earn	inge.	Neces-	Conne- quent
		daily earn- ings.	ploy-	Total.	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Laborers—concluded	79 79 79 79	\$1.00 1.15 1.25 1.87§	1 4 4 2	15 132 232	15 23 58 25	\$15 150 286 96	\$15 28 72 48	0, 19 1, 67 2, 94 0, 87	\$78 96 97 108
Total	79	1, 20	\12	464	29	557	46	5. 87	96
Laborers, furnace	79 79	1.10 1.15	1	84 72	84 72	96 83	98 83	1.06 0.91	87 91
Total	79	1.13	2	156	78	176	88	1.97	89
Machinist	79 92 92 92 79 79	1. 65 1. 80 1. 87 1. 15 1. 40 2. 60	1 4 1 1 8	78 5 363 92 20 151	78 5 91 92 20 50	129 9 679 105 28 458	129 9 170 105 28 151	0.90 0.05 3.95 1.00 0.25 1.91	131 100 172 193 111 237
The establishment		1. 52	48	3, 106	65	a 4, 729	90	35.44	123

ESTABLISHMENT No. 54.

Blacksmith	104	\$1.35	1	104	104	\$141	\$141	1.00	\$141
Carpenter	104	2.00	1	20	20	40	40	0.19	205
Cinder tappers	122	1. 20	4	419	105	501	125	3, 43	140
Cinder tapper and gutterman.	122	1.28	1 1	7	7		9	0.06	15
Cinder tapper and laborer Cinder tappers' helpers	122	1. 13	1	44	44	50	50	0. 36	131
Conductor	123	1.10	1	216	72	238	79	1.77	13
CORRECTOR	123	1. 25	1	94	94	117	117	0.77	15:
Engineers	123	1.45	2	129	65	187	94	1.06	17
	122	1. 65	Ī	115	115	190	190	0.94	20:
Total	122	1, 541	•	241	81	277	126	2.00	189
1000	122	T- 045	1 •		97	l •"	120	200	19:
Fillers, bottom	122	1, 20	8	677	85	807	101	5.55	14
Fillers top.	122	1.45	2	235	118	340	170	1.93	17
Fillers and laborers	123	1.094	11	604	55	662	60	4.95	13
Guttermen	122	1.40	4	420	105	588	147	3.44	17
Keepers	122	1.45	2	231	116	335	168	1.89	17
Keepers' helpers.	122	1. 20	2	224	112	209	135	1.84	14
washers washers	122	1.30	1 2	237	119	- 309	155	1.94	150
	100				1110	305			
Total	123	1. 254	4	461	115	578	145	3. 78	153
		٠	١	۱ ـ	۱				
Laborers	122	1.00	34	2, 030	60	2, 073	61	16.64	12
Stableman	122	1.00	1	122	122	122	122		12:
Stock breaker	123 123	1. 00 1. 25	1 4	215	105	105 268	105		12 15:
Yardmaster	122	1.50	1 1	122	122	183	183		183
T are A THUMBORE	144				1	122			10.
The cetablishment		1. 124	85	6, 370	75	b 7, 534	86	52.38	144
				,	'	1 .,		i	

s In addition \$140 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 52 and 592.

• The seruings abown here and for this establishment on page 52, although for the same length of time, are for different periods.

ESTABLISHMENT No. 95.

	Working	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if uen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work o		Earni	ngs.	Nones-	Conse-
		daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.
Brakemen	334 334	\$1.25 1.35	1 2	205 151	205 76	\$256 204	\$256 102	0. 61 0. 45	\$117 451
Total	334	1. 29	3	356	119	460	153	1.06	43:
Cinder tappers	334 334 334 334	1.15 1.30 1.40 1.45	10 44 1 2	1, 666 236 494	24 38 236 247	281 2, 160 325 716	28 49 325 358	0.73 4.99 0.71 1.48	385 433 460 484
Total	334	1.32	57	2, 640	46	3, 482	61	7.91	441
Cinder tappers and fillers Cinder tapper and laborer	334 334	1.164 1.20	4	79 5	20 5	92 6	23 6	0. 24 0. 01	389 401
Engineers	334 334 334	2, 00 2, 60 3, 25	7 1 1	808 5 28	115 5 28	1,597 13 91	228 13 91	2.42 0.01 0.08	660 868 1,086
Total	334	2, 021	9	841	93	1,701	189	2.51	676
Engineer and wiper Fillers Filler, bottom	334 334 334	1.14 1.36 1.334	1 3 1	303 385 3	303 128 3	345 524 4	345 175 4	0.91 1.15 0.01	386 455 445
Fillers, stockhouse	334 334 334	1.00 1.15 1.25	3 190 2	6, 146 615	2 32 308	7, 104 769	2 37 385	0. 02 18. 40 1. 84	334 386 418
Total	334	1.16	195	6, 768	35	7, 880	40	20. 26	389
Fillers, top	334 334 334	1.75 1.334 1.50	2 1 4	496 3 680	248 3 170	866 4 1,020	433 4 255	1. 49 0. 01 2. 04	583 445 501
Foremen	334 334	2, 00 2, 37	1 2	55 475	55 238	110 1, 125	110 563	0. 16 1. 42	668 791
Total	334	2.33	3	530	177	1, 235	412	1.58	778
Iron handlers	334 334 334	1. 20 1. 50 1. 661	2 3 1	150 228 3	75 76 3	182 348 5	91 116 5	0. 45 0. 68 0. 01	405 510 537
Total	334	1.40	6	381	64	535	80	1.14	460
Keepers	334 334	1.75 1.40	2 15	580 1, 324	290 89	1,011 1,868	506 125	1.74 3.99	582 468
Laborers	324 334 334 334 334	1.00 1.10 1.15 1.25 1.35	27 1 4 1	618 76 17 72 72	23 76 4 72 18	628 85 20 90 98	23 85 5 90 25	1. 85 0. 23 0. 05 0. 22 0. 22	339 374 393 418 455
Total	334	1.07	37	855	23	921	25	2, 57	360
Laborer and stoveman	334 304 334 334 334	1.21± 2.25 1.00 1.27± 1.15	1 1 5 4 3	23 4 290 464 356	23 4 58 116 119	28 9 291 592 413	28 9 58 148 138	0. 07 0. 01 0. 87 1. 39 1. 07	407 752 335 426 387
The establishment		1.34	358	17, 376	49	a 23, 287	65	52.05	448

a The carnings here shown are for cloven months only. The statement for this establishment on page 52 is for eighteen months.

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. B .- Pig tron: SOUTHERN DISTRICT OF THE UNITED STATES-Continued.

ESTABLISHMENT NO. 101.

	Work- ing	danz	,	Actual o	anditio	n for per	iod.	works	ition if men had inpocs oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	s of done.	Earn	ings.	Neces-	Couse-
		daily earn- ings.	em- ploy- és.	Total,	Average.	Total.	Aver-	em- ployés.	per em- ployé.
Blacksmiths	184 184 184	\$2,75 1.25 1.20	2 4 196	347 283 5, 817	174 71 30	\$959 353 6, 976	\$450 88 30	1.89 1.53 31.61	\$509 230 221
Carpenters	184 184 184	2.00 2.25 2.75	1 3 1	4s 251 186	48 54 186	100 577 528	100 192 528	0.26 1.36 1.01	383 423 523
Total	184	2.48)	5	485	97	1, 205	241	2, 63	457
Cinder tappers	184 184 184	1. 35 1. 40 1. 50	51 13 4	2,583 235 534	51 16 129	3, 472 234 829	68 22 207	14.04 1.28 3.01	247 262 273
Total	184	1.37	_	3, 372	48	4, 635	66	18.32	253
Cinder tappers and coke fork-	184	1.25	3	24	8	30	30	0.13	190
era. Cunder tapper and iron piler. Cunder tappers and laborers Coal whrelers and firemen Coke drivers	184 184 184 184	1.833 1.17 1.00 1.27 1.15 1.07	5 5 23	\$10 57 153 822 345 147	102 11 78 23 49 147	8 569 57 197 600 370 156	8 120 11 99 28 51 156	0.63 2.77 6.31 0.84 2.84 1.88 6.80	245 216 184 224 211 197 195
Coke forkers	184 184	1.00	1 95	2, 597	2 27	3, 106	2 33	0.0t 14.11	184 220
Total	184	1. 194	96	2, 509	27	3, 108	22	14.12	220
Coke forkers and ishorers Engine wipers Engineers Engineers, locomotive	184 184 184 184 184	1.004 1.15 2.25 2.00 8.25	2 2	493 209 207 163 184	17 52 149 92 184	541 247 668 549 600	19 62 334 275 600	2.68 1.14 1.61 0.99 1.00	202 217 414 552 600
Total	184	3.13	3	367	122	1,149	383	1.99	576
Engineer and engineers' helper.	184	1.75	1	109	100	105	195	0.50	229
Engineers' helpers	184 184	1.25 1.50	10	419 706	42 118	\$18 1,059	52 177	1.28	276
Total	184	1.40	16	1, 125	70	1,577	99	6.12	258
Engineers' helper and laborer. Engineers' helper and team- ster.	184 184	1. 24 1. 125	1	50 113	50 113	90 127	. 82 127		2
Filler of laborers belows	184 184 184	1, 23 1, 73 1, 16 1, 50	17 6 6	551 906 234 767	92 151 29 218	665 1, 556 260 1, 040	40 259 42 173	1.33 1.33 1.34	300 300 301 301
Pirenez	164 164	1.50 1.73	10	906 384	97 154	1, 442 329	144	1.5 1.00	273
Tetal	284	1. 534	11	1, 158	:05	1,704	100	12	180
Peremea	. 184	J. 20)	3	:00	::0	604	222	1.86	-
Pagadere	284 384	1. SS	1	182	182 184	500 233	530 900	0.00 1.00	350
Total	384	1.04		388	143	1.03	. 727	1.0	

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued B .- Pig Iron: SOUTHERN DISTRICT OF THE UNITED STATES-Continued.

ESTABLISHMENT No. 101-Concluded.

•	Work-	Actual daily earn- inga, or daily	4	ret ual c o	ndi tio	a for peri	od.	work	lition if men had innous oymens
Occupation.	days in the period.	rate Degrest to Average	Dif.	Days Work		Earni	ngs.	Neces	Conne quent average
		daily earn- ings.	ploy- 6a.	Total.	Aver- age.	Total	Aver-	em- ployés.	per em- ployé.
Inclinemen Iron breakers	194 184	\$1. 15 (a)	2 15	310 (4)	155 (a)	\$362 2, 546	\$181 170	1. 68 (4)	\$21((4)
Iron carriers	184 184	1. 50 2. 00	1 21	203 1, 296	203	311 2,582	311 123	1.10 7.04	25 36
Total	184	1. 93	22	1, 498	68	2, 893	132	8.14	35
Iron grader	184 184 184 184 184	1.06 (g) (a) 1.10 2.00	1 9 2 11 5	153 (4) (a) 728 714	153 (4) (a) (a) 66 143	800 1, 605 80 803 1, 425	200 178 40 73 285	0, 83 (a) (a) 3, 96 3, 88	(a) (a) 20: 36
Keepers' helpers	184 184 184	1. 25 1. 45 1. 55	13 10 7	666 834 623	51 83 60	849 1, 191 975	65 119 189	3. 62 4. 53 3. 38	294 262 284
Total	184	1.42	30	2, 123	71	3, 015	101	11.53	26
Keepers' helper and laborer Laboratory boy Laborers	184 184 181	1.00 1.00 1.00	1 1 118	118 1, 803	118 13	113 1,545	113 13	0. 01 0. 64 8. 18	18- 170 180
Laborers, yard	184 184 184	1.00 1.10 1.25	5 25 2	28 865 211	35 106	28 961 262	6 38 131	0. 15 4. 70 1. 15	18 20- 22
Total	184	1. 131	82	1, 104	35	1, 251	89	6.00	20
Machinists	184	2.50	5	631	139	1, 734	847	8.77	46
Masons	184 184	3. 25 4. 50	1	18 8	18 8	50 36	59 36	0. 10 0. 04	80 82
Total	184	3, 65	2	26	13	95	48	0.14	67
Master machinist	184	4. 07	3	167	84	680	340	0.91	74
Ore dumpers	184 184	1. 15 1. 25	3	187 180	62 83	217 163	72 41	1.02 0.71	• 23
Total	184	1. 20	7	817	45	280	54	1.78	22
Porter Sand sifters Scavonger Scrapmen Stableman and teamater	184 184 184 164	. 98 1. 10 . 50 1. 15	1 2 1 4	153 290 178 361	153 145 178 00	150 319 89 415	150 160 89 104	0. 83 1. 58 0. 97 1. 96	19 20 9 21
Storekeeper	184	1.39	1	198 184	198 184	275 276	275 276	1. 08 1. 00	25
Stovemen	184 184 184	1. 75 1. 00 1. 50	9	717 501 15	56 15	1, 256 502 23	140 56 23	3.90 2.72 9.08	18 24
Total	184	1.013		516	52	523	53	2. 80	18
Weighmen	184	1. 30	:	806	194	1, 046	174	4.38	23
The establishment		(b)	828	(6)	(b)	e 54, 433	66	(6)	(6)

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the preceding foundes.
c The carnings here shown are for six months only. The statement for this establishment on page 53 is for one year.

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. A.-Pig Iron: MORTHERN DISTRICT OF THE UNITED STATES-Continued.

ESTABLISHMENT No. 58-Concluded.

	Work	anny	l	otual ço:	polition	for pe rio	d.	Works Co. 1	lition if nen had innous syment,
Occupation.	days in the period.	TRIO ROGFOCE TO SVOTAGE	Dif- ferent	Day: work		Barn	inge.	Neces-	Conse- quent average
		daily earn- ings.	em. ploy. éa.	Total.	Avor-	Total.	Aver-	9m- p!056a.	per em- ploy 6.
Railroad bees	313 345	\$2.00 1.00	1 12	297 3, ¢61	297 330	\$394 6, 266	\$594 523	0. 96 10. 85	900G 577
Stockhouse men	265 263 263	1.40 -1.45 1.55	6 1 14	932 261 2, 822	159 261 202	1, 350 378 4, 352	227 378 311	2. 61 0. 72 7. 78	521 529 563
Total ,	365	1.51	21	4, 035	192	6, 089	290	11.06	551
Storekeeper	365	1.40	1	14	14	20	20	0.04	521
Stevemen	365 365	1. 98 2. 10	1 3	307 8C0	307 297	600 1, 845	600 622	0. 84 2. 44	724 765
Total,,,	865	2.06	4	1, 197	299	2, 474	619	3. 28	754
Timekeeper	313 313 365	2. 88) (4) 1. 60	(b) 1	312 (a) 361	312 (a) 351	900 3, 438 578	900 (b) 578	1.00 (a) 0.99	903 (4) 584
Water boys	36 5 36 5	. 75 . 88	6 2	306 231	66 116	297 203	50 102	1.08 0.63,	274 321
Total	865	. 79}	8	637	78	500	63	1.71	291
Water tenders	363	2.10	2	700	855	1, 495	748	1. 94	770
Wipers	305 365	1. 50 1. 67½	4	989 74	247 74	1, 501 124	375 124	2. 71 0. 20	554 612
Total	805	1.53	5	1, 063	213	1, 625	825	2.91	558
Woolmen	865 865 866	1.45 1.65 1.60	1 3 1	73 518 318	78 173 318	108 804 513	108 268 513	0. 20 1. 42 0. 87	540 567 569
Total	865	1. 57	5	900	182	1, 425	285	2.49	572
Tardmaster	365	2. 25	1	291	291	656	655	0. 80	822
The establishment	•••••	(0)	(c)	(e)	(c)	d187, 677	(¢)	(6)	(6)
	ES	STABLIS	знме	NT No.	67.				
Blacksmith	313	\$1. 90	1	317	817	\$601	\$601	1, 01	\$593
Beilermen ,	365 365	1. 60 1. 70	1	319 35	819 35	519 6 0	519 60	0. 87 0. 10	594 626
Total	365	1.631	2	354	177	579	290	0.97	597
Brakeman, locomotive Carpenter	365 313	1. 381 1. 60	1 1	246 289	246 289	841 463	841 463	0. 67 0. 92	506 501
Angineers, furnace	86 5	2. 87 3. 00	1	845 340	345 340	818 1, 021	818 1, 021	0. 93 0. 93	865 1, 096
Total	365	2. 681	-	685	313	1, 839	920	1. 88	940

e Paid by the quantity. The daily rate of pay and days of work done cannot be given.

b Number of employes not given.
c No total can be made for reasons shown in the preceding footnotes.
The earnings here shown are for one year. The statement for this establishment on page 52 is for two months only.

ESTABLISHMENT No. 103-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy- 68.	Total.	Aver- age.	Total.	Aver- age.	em- ployés.	per em- ployé.
Foremen, track	365	\$1.64	2	358	179	\$588	\$294	0.98	\$399
Helpers	365 365 365 365 365	1.10 1.15 1.20 1.25 1.50	3 1 2 6 1	157 13 118 443 176	52 13 59 74 176	170 15 144 543 264	57 15 72 91 264	0, 43 0, 04 0, 32 1, 21 0, 48	395 421 445 447 548
Total	365	1. 25	13	907	70	1, 136	87	2,48	437
Hot-blast man	365	1. 15	1	328	328	376	376	0.90	418
Iron handlers	365 365 365 365 365	1. 10 1. 25 1. 30 1. 60 1. 75	1 2 4 6 4	204 183 1, 364 373 556	204 92 341 62 139	230 227 1,766 586 964	230 114 442 98 241	0.56 0.50 3.74 1.02 1.52	412 453 473 573 633
Total	365	1.41	17	2, 680	158	2,773	222	7.34	514
Iron handler and keeper	365	1.72	1	312	312	536	526	0.85	627
Iron handlers and laborers	365 365	1. 31 <u>4</u> 1. 62 <u>6</u>	2	19 152	10 152	25 247	13 247	0, 05 0, 42	480 593
Total	365	1, 59	3	171	57	272	91	0.47	581
Keepers	365	1.85	3	704	235	1, 276	425	1. 93	662
Laborers	365 365 365 365 365 365 365 303	.40 .50 .80 .85 1.00 1.05 1.10 1.25	2 8 1 1 199 26 15 4	28 860 61 134 4, 735 797 600 349	19 108 51 134 24 31 40 87	15 448 30 113 4,759 832 640 434	8 56 30 113 24 32 44 109	0. 10 2. 36 0. 14 0. 37 12. 97 2. 18 1. 64 0. 96	144 190 215 308 367 381 403 454
Total	365	. 96}	256	7, 564	30	7, 291	28	20, 72	353
Laborer and slagman Laborer and water tender Machinist	365 365 365	1. 14 1. 254 3. 00	1 1 1	85 75 340	85 75 340	97 94 1, 019	97 94 1, 019	0, 23 0, 21 0, 93	417 457 1, 094
Moulders	365 365 365 365 365	1, 25 1, 35 1, 40 2, 10 2, 50	2 1 3 1 3	118 239 473 308 327	59 239 158 308 109	147 316 661 635 813	74 316 220 635 271	0, 32 0, 65 1, 30 0, 84 0, 90	455 468 510 758 907
Total	365	1.75	10	1, 465	147	2, 572	257	4.01	611
Moulder and stocker	365 365	1. 23 1. 15	1 16	144 1, 738	144 109	177 2, 004	177 125	0.30 4.76	440
Stockers	365 365 365 365	1.00 1.10 1.15 1.20	6 62 6 1	1, 593 147 5	10 26 25 5	1, 757 168 6	10- 28 28 6	0. 16 4. 36 0. 40 0. 01	371 403 417 438
Total	365	1. 103	75	1, 804	24	1,991	27	4. 93	403
Water tenders	365	1.40	3	475	238	669	235	1. 20	514
The establishment	-	1.34	586	33, 037	56	a 41, 327	76	90, 44	400

a In addition \$2,571 was paid to outside persons for labor done under centract, which is included in the statements for this establishment on pages 52 and 50%.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

B.—Pir Iron: SOUTHERN DISTRICT OF THE UNITED STATES—Continued.

ESTABLISHMENT 30. 100.

	Work	rement's	A	etani o	milition	for peri	od.	works	ition if men had inuous yment.
Occupation.	days	THE PARTY AND ATTERNATION ATTE		Day work		Earn	ings.	Neces-	Conse- quent average
		dan'y outs-	ploy-	Total	Aver-	Total.	Aver-	em- ployés.	earnings
Nincksouties	313	\$1. 70	ī	314	296 314	\$174 650	\$174 650	0.95 1.60	\$50 64
I'vial	114	:. 44	:	310	205	1, 124	562	1. 95	577
Man kawaha haiput	113 114 115	:. 30 :. 44 :. 44	1 1 1	281 47 118 225	251 34 316 226	291 200 453 658	221 100 453 658	0.90 0.21 0.87 1.04	31: 93- 52: 6.6
Made week.	***	1, J 0 1, 13 1, 28	*	2 75 2 75 25	45 :14 :243	3, MC: 362 362	69 128 362	0. 18 7. 48 0. 78	35 40 45
ا سار ما	· •	L :31	3	7, 230	11.5	3, 193	134	8.44	414
Mais pia	9 9 3	200 1, 300 1, 17	1	20 702 102 10	29 212 202 202	25 279 316 33	359 316 316	0.08 0.91 0.45 0.08	32 36: 40: 42:
	, m	1. 14	$\dot{-}$	עני:	173	778	181	·	28
todal Bung et Cugnica t	:440 1464		7	-	32. 3.6	678 1, 321	229 661	1. 77 1. 96	321 67:
- allow a	1842 1843	: *:	:	23	753 W	310 323	 	0. 76 0. 79	410
to gi	•••	50.0	,	. 6	::3	613	129 37	1. 55 0 63	41:
ration of the w	on.b gigs des b gags	7	7. 7.		25 48 77 27	256 1, 925 4, 913 378	74 74	4.86 11.24 0.85 0.96	396 416 433
	**			12	· :::	7, 595	76	18. 61	44-
iliani Ballari — pr	. 150 136 136			5: T	: 16	134 90) 372	, 163	0. 37 2. 27 0. 69	410 433 531
41.19	1964				<u>u:</u>	1, 316	168	3. 33	45
kithoris tim	44	97.	:	:::	:=	113	115	0. 86	
hy en en en	املوه المسيد	1 J. L 2 40	;	~	9; ;J4	874 170	157 477	0. 25 1. 06	. 60°
t. at	age, t	. 44	, i	• 2	:00	1, 1:4	365	1. 31	841
	Inc. 1	1 %	:	*****	- 16	1.6°0 371 417	1.6°0 .71	t. 00 0. 8t	1, 64: 45
Angles Notes Notes and Angles	, , , , , , , , , , , , , , , , , , ,	1 43	ì	15	34	41.	417 90	0. 81 0. 23	39
4	ud 1 10: 1	, e.	1	٠,		373 513	375 278 022	0, 79 1, 65 1, 79	477 500 531
	***	1 44		4. •	21.5	363			
1, 1	100,0	1.6%	. :	1. 45	*21	2, 173	310 4	4.23 0.01	
to make the second	198 1 13 1 1 1				:,	247 613 1, 340	247 154 130	0, 61 1, 42 3, 44	40:
	٠, ١	, ,	11	e ses Lives	111				

ESTABLISHMENT No. 109-Concluded.

•	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	o for peri	, o đ.	work	ition if nen had innous yment.
Occupation.	days in the period.	rate noarest to average	Dif- ferent	Days work o	of lone.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em. ploy. és.	Total.	Aver- age.	Total.	Aver-	eary em- ployés.	earnings per em- ployé.
Keepers	365	\$2.00	3	680	227	\$1,359	\$453	1.86	, \$729
Laborers	813 813 813 813 813 813 313	.671 .75 .90 1.00 1.08 1.13 1.17	1 3 14 173 27 13 2	3 99 247 6, 072 1, 507 2, 061 301	3 88 18 35 56 159 151	74 227 6, 071 1, 596 2, 314 359	25 16 85 59 178 180	0. 01 0. 32 0. 79 19. 40 4. 81 0. 58 0. 96	209 234 248 313 331 851 878
· Total	313	1.03	233	10, 290	44	10, 643	46	82.87	824
Machinist	365 313	2. 79± 3. 00	1	366	366 1	1,020	1, 020	1.00 0.00	1, 017
Moulder	365 365	1.55	î	268 361	268 361	414 361	414 361	0.73 0.90	564 365
Runnermen	368 365 365	1.00 1.17 1.40	1 5 1	821 236	3 181 256	3 973 337	3 195 337	0. 01 2. 25 0. 70	363 433 509
Total	365	1. 233	7	1, 080	154	1, 333	190	2.96	451
Stableman	365	1. 07	1	299	200	320	320	0. 82	391
Stovemen	365 365 365	1.00 1.311 1.40	1 1 2	18 70 186	18 70 93	18 92 281	18 92 141	0. 05 0. 19 0. 51	365 480 551
Total	865	1. 42}	4	274	69	391	98	C. 75	521
Sweepers	365 365 385	. 50 . 75 1. 00	2 5 2	102 645 43	51 129 22	51 460 44	26 92 22	0. 28 1. 77 0. 12	185 266 377
Total	363	. 70}	9	790	88	535	63	2.17	250
Water boys	365 363	. 50 1. 85	9	908 780	101 260	458 1, 015	31 338	2.49 2.14	18
The establishment		1. 23	460	36, 622	80	a 44, 936	98	105. 59	420
	E	STABLI	знив	NT No.	114.				
Blacksmith	365	\$1.50	1	320	320	\$187	\$487	0.88	\$355
Cagemen	265 365	1. 10 1. 15	1 1	10 88	10 88	11 100	11 100	0. 03 0. 21	40:
Total	365	1. 13	2	98	49	111	56	0. 27	413
Cinder tappers	365 365	. 90 1. 00	1 3	238 474	235 158	210 475	210 158	0. G5 1. 30	325 300
Total	365	. 96	4	712	178	685	171	1. 93	351
Engineers	365	1.75	6	716	119	1, 253	209	1.96	131
Fillers, bottom	365 365 363	1.00 1.05 1.10	10	109 2, 260 201	109 119 291	109 2,390 321	100 126 321	0.30 6.19 0.81	363 386 396
			:	·					

ESTABLISHMENT No. 101.

	Work-	Actual daily earn- ings or daily	A	ctual o	andition	o for peri	od.	works	ition if nen bad inuous oyment.
Occupation.	days in the period.	rate nearest	Dif- ferent	Day	s of done,	Earn	ings.	Neces-	Couse- quent average
		daily earn- ings.	em- ploy- és.	Total,	Aver-	Total.	Average.	em- ployés.	per em- ployé.
Blacksmiths	184 184 184	\$2, 75 1, 25 1, 20	2 4 106	347 283 5, 817	174 71 50	\$959 353 6, 976	\$480 88 36	1. 89 1. 53 31. 61	\$500 230 221
Carpenters	184 184 184	2.00 2.25 2.75	1 3 1	251 186	48 84 186	100 577 528	100 192 528	0, 26 1, 36 1, 01	383 423 523
Total	184	2. 481	5	485	97	1, 205	241	2, 63	457
Cinder tappers	184 184 184	1.35 1.40 1.50	51 15 4	2, 583 235 554	51 16 139	3, 472 334 829	68 22 207	14. 04 1. 28 3. 01	247 263 278
Total	184	1. 37	70	3, 372	48	4, 635	66	18. 33	251
Cinder tappers and coke fork-	184	1. 25	3	24	8	30	10	0, 13	230
ers. Cinder tapper and iron piler. Cinder tappers and laborers. Coal wheelers and firemen. Coke drivers. Coke drivers and laborers. Coke drivers and laborers.	184 184 184 184 184 184 184	1. 321 1. 171 1. 00 1. 27 1. 15 1. 07 1. 06	1 5 5 2 23 1	510 57 153 522 345 147	102 11 78 23 49 147	599 57 197 600 370 156	8 120 11 99 26 53 156	0. 03 2. 77 0. 31 0. 84 2. 84 1. 88 0. 80	244 216 184 234 211 197 198
Çoke forkers	184 184	1,00 1,20	95	2, 597	2 27	8, 106	2 33	0.01 14.11	184 220
Total	184	1. 104	96	2, 509	27	3, 108	32	14. 12	220
Coke forkers and laborers Engine wipers Engineers Engineers, locomotive	184 184 184 184 184	1. 09½ 1. 15 2. 25 3. 00 3. 25	20 4 2 2 2	493 209 297 183 184	17 52 149 92 184	541 247 668 549 600	19 62 334 275 600	2.68 1.14 1.61 0.99 1.00	203 217 414 553 664
Total	184	3.13	3	367	122	1, 149	383	1.99	570
Engineer and engineers' helper.	184	1.79	1	109	109	195	195	0. 59	329
Engineers' helpers	184 184	1.25 1.50	10 6	419 706	42 118	518 1,059	52 177	2. 28 3. 84	227 276
Total	184	1.40	16	1, 125	70	1,577	99	6. 12	258
Engineers' helper and laborer. Engineers' helper and team- ster.	184 184	1. 24 1. 124	1	50 113	50 113	62 127	62 127	0. 27 0. 61	228 207
Fallmen Fillers, top Fillers and laborers Fillers' helpers	184 184 184 184	1.25 1.75 1.10 1.50	17 6 6 6	551 906 23d 707	32 151 39 118	885 1,556 260 1,040	259 43 173	2,99 4,92 1,28 3,84	229 316 203 271
Firemen	184 184	1.50 1.75	10	966 184	97 184	1, 442 323	144 322	5. 25 1. 00	275 322
Total	184	1, 531	11	1, 150	105	1,764	160	6. 25	282
Foremen	184	1. 931	3	360	120	696	232	1. 96	356
Founders	184 184	2. 93 4. 89	1	189 184	182 184	533 900	538 900	0, 99 1, 00	539 900
Total	184	3. 01	2	366	183	1, 433	717	1.99	720

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. C.—Pig Iron: CONTINENT OF EUROPE—Concluded.

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table I.]

	Work-	Actual daily earn- ings, or daily		ctual co	ondition	n for peri	od.	work	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day	of done.	Earni	ngs.	Neces-	Conse-
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	eary em- ployés.	per em- ployé.
Blacksmiths Blacksmiths' helpers Boiler cleaners Carpenter	78 78 91 78	\$0. 741 .45 .204 674	2 3 4 1	186 245 320 41	93 82 80 44	\$139 110 65 29	\$70 37 16 29	2.38 3.14 3.52 0.56	\$58 35 18 51
Cinder sorters	91 91	.24 .54	2	133	67 80	32 43	16 43	1.46 0.88	27
Total	91	.35	3	213	71	75	25	_2.34	35
Cinder tappers	91 91 91 91 91	.583 .604 .604 .714 .734	6 4 9 6 7	448 334 746 492 508	75 84 83 82 73	263 202 451 351 373	51 50 59 53	4.92 3.67 8.20 5.41 5.58	55 55 65 67
Foremen	91 91	. 97 1. 494	2	171 90	86 90	166 134	83 134	1.88	8
Total	91	1. 15	3	261	87	300	100	2, 87	. 100
Foreman, machinists	91 91	1.351	1	106 102	106 102	143 62	143 62	1.16 1.12	125 53
Ktepers	91 91	1.23	1	82 89	82 80	100 132	100 132	0.90 0.98	111
Total	91	1.35	2	171	86	· 232	116	1.88	123
Keepers' helpers	91 91	. 69 . 91	5 5	377 410	75 82	261 376	52 75	4.14	65
Total	91	.81	10	787	79	637	64	8. 65	74
Laborers	91 91 91 91	.29 .385 .456 .586	1 1 1 3	74 42 74 250	74 42 74 86	21 16 33 151	21 16 33 50	0.81 0.46 0.81 2.65	26 33 41 55
Total	91	.49	ď	449	75	221	37	4.93	4
Limestone breakers	78 91 91	. 55 . 264 . 53 . 60 . 271 . 60	5 1 6 18 2 6	365 72 422 1, 252 176 517	73 72 70 70 88 86	200 19 224 754 48 356	40 19 37 42 24 59	4. 01 0. 92 4. 64 13. 76 1. 93 5. 68	56 21 48 55 21 63
Weighmen	91 91 91	. 58 . 624 . 72	1 2 1	73 179 97	73 90 97	112 70	42 56 70	0.80 1.97 1.07	51 51 60
Total	91	.64	- 4	349	87	224	56	3.84	58
The establishment		.64	110	8, 565	78	5,478	50	95.11	- 58

H. Ex. 265--21

ESTABLISHMENT No. 103.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had nuous yment.
Occupation.	days in the period	rate nearest to average	Dif- ferent	Day	s of lone.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- éa.	Total	Aver-	Total.	Aver-	sary em- ployés.	earnings per em- ployé.
Blacksmiths Blacksmiths belpers. Brakeman Brakeman, dinkey Brakeman and fireman Brakeman and laborer.	365 365 365	\$2.00 1.00 1.50 1.35 1.28 1.25	2 3 1 1 1	318 331 74 200 111 4	159 110 74 200 111	\$635 335 111 267 142 5	\$318 112 111 267 142 5	0, 87 0, 91 0, 20 0, 55 0, 55 0, 01	\$729 369 548 487 467 456
Bricklayers	365 365	4. 00 5. 00	12	49 5	5	194 25	16 25	0.13 0.01	1, 445
Total	365	4. 051	13	54	4	219	17	0.14	1, 480
CagemanCageman and fillerCarpenterDrivers	365 365 365 365	1.40 1.30 1.50 1.15	1 1 1 2	339 70 351 362	339 70 351 181	473 91 527 410	473 91 527 205	0. 93 0. 19 0. 96 0. 99	509 473 548 413
Engineers	365 365 365 365	1, 25 1, 50 1, 75 2, 00	1 1 1 3	123 36 74 330	123 36 74 110	159 54 133 649	159 54 133 216	0, 34 0, 10 0, 20 0, 90	479 548 636 718
Total	365	1.76	6	563	94	995	166	1.54	645
Engineers, dinkey	365 365	1.50 2.00	3	752 286	251 286	1, 105 573	368 573	2.06 0.78	536 731
Total	365	1.61	4	1, 038	260	1,678	420	2.84	590
Engineers, locomotive	365 365	2.00 2.25	1	176 192	176 192	366 424	366 424	0.48 0.53	759 806
Total	365	2.14	2	368	184	790	395	1.01	784
Engineer and water tender	365	1.82	1	313	313	570	570	0.86	665
Fillers	365 365 365 365 365	1.00 1.10 1.15 1.20 1.25	1 17 28 60 4	27 596 1,435 4,161 728	27 35 51 60 182	27 664 1, 660 4, 959 913	27 39 59 72 228	0.07 1.63 3.93 11.40 1.99	365 407 •23 435 458
Total	365	1.18	119	6, 947	58	8, 223	69	19.02	432
Fillers, top.	365 365 365 365 365	1. 10 1. 15 1. 25 1. 35 2. 30	1 1 1 3 1	27 258 236 739 234	27 258 236 246 234	29 301 292 1, 006 537	29 301 292 335 537	0. 07 0. 71 0. 65 2. 02 0. 64	392 426 453 497 838
Total	365	1.45	7	1, 494	213	2, 165	309	4.09	529
Filler and helper	365 365 365	1. 25 1. 084 1. 114		56 80 69	56 16 69	70 87 77	70 17 77	0. 15 0. 22 0. 19	456 397 407
Firemen	365 365 365	1.00 1.15 1.50	1 6 1	21 96 6	21 16 6	21 109 9	21 18 9	0, 06 0, 26 0, 02	365 414 548
Total	365	1.13	8	123	15	139	17	. 0.34	412
Foremen	365 365	2. 06 5. 25	1	257 365	257 365	530 1, 917	530 1, 917	0.70 1.00	753 1, 917
Total	365	3.93	2	622	311	2,447	1, 224	1.70	

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. D.—Pig Iron: GREAT BRITAIN—Continued.

ESTABLISHMENT No. 36-Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	onditio	n for peri	od	works	ition if nen had inuous yment.
Occupation.	days in the period.	nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Laborers	91 91 91	\$0.463 .484 .57	1 17 3	86 1,310 104	80 77 35	\$40 650 56	340 38 19	0. 95 14. 40 1. 14	\$42 45 49
Tota	91	. 49}	21	1, 500	71	746	36	16, 49	45
Liftmen	91 91	.74 .76	2 2	157 163	70 82	117 124	59 62	1.73 1.79	68 69
Total	91	. 751	4	320	80	241	60	3, 52	69
Masons	78 78	.71 .85	2	117 99	50 99	83 84	42 84	1.50 1.27	55 66
Total	78	.774	3	216	72	167	56	2.77	60
Masons' helpers	78 78	.301	1	78 301	78 75	28 165	28 41	1.00 3.86	28 43
Total	78	. 51	5	379	76	193	39	4, 86	40
Messenger	91	.28	1	91	91	25	25	1.00	25
Moulders	91 91 91	.484 .59 .71	3 17 1	1, 183 85	47 70 85	67 693 58	22 41 58	1.41 13.00 0.93	48 53 62
Total	91	581	21	1,396	66	818	39	15. 34	53
Navvies	91 91	. 544	7	376 78	54 78	206 44	29 44	4. 13 0. 86	50 51
Total	91	. 55	8	454	57	250	31	4.09	50
Spare bands	91 91	. 60	16 1	1, 504 101	94 101	903	36 61	16. 53 1. 11	55 53
Sweepers	91 91	. 421	2 2	182 152	91 76	78 71	39 36	2.00	39 43
Total	91	.44)	4	334	84	149	37	3, 67	41
Timekeeper and number taker. Water tender Weighmen	91	. 721 . 59 . 61	1 1 2	91 91 182	91 91 91	66 54 111	66 54 56	1.00 1.00 2.00	66 54 56
The establishment		.67	148	11, 618	79	a 7, 761	52	130. 62	50
	E	STABLI	SHME	NT No	. 37.				
Blacksmiths	73 78 78	\$0.73 .77 .974	2 1 1	177 103 78	89 103 78	\$120 79 76	\$65 79 76	2.27 1.32 1.00	#57 60 76
Total	78	. 791		368	99	284	'71	4.59	62
Blacksmiths' strikers	78	. 523 . 61 . 65 . 73 . 244	4	356 391 367 107 156	80 98 93 107 78	187 239 238 78 38	47 60 60 78 19	4.56 4.30 4.03 1.37 2.00	41 56 59 57

The earnings here shown are for three months only. The statement for this establishment on page 51 is for six months.

ESTABLISHMENT No. 109.

	Work-	Actual daily earn- ings, or daily	A	ctual co	nditio	a for peri	od.	works	ition if men had innous syment.
Occupation.	lng days in the period.	rate nearest to average	ferent	Day work	of lone.	Earn	ngs.	Neces-	Conse- quent
		dally earn- ings.	ploy- és.	Total.	Average.	Total.	Aver- age.	em- ployés.	average earnings per em- ployé.
Blacksmiths	313 313	\$1.60 2.05	1	29G 314	296 314	\$174 650	\$174 650	0.95 1.60	\$50 64
Total	313	1.84}	2	610	305	1, 124	562	1. 95	577
Blacksmiths' helper	313 313 365 313	1.00 3.00 1.433 2.00	1 2 1 1	281 67 316 326	281 34 316 326	281 200 453 658	281 100 433 658	0.90 0.21 0.87 1.04	31: 93- 52: 65:
Cindermen	365 365 365	1.00 1.13 1.28	24 1	2, 732 283	65 114 283	3, 562 362	69 128 362	0.18 7.48 0.78	387 400 467
Total	365	1. 131	26	3,080	118	3, 493	134	8.44	414
Drivers	365 365 365 365	1.00 1.13 1.17	1 1 1 1	29 332 809 30	29 332 309 30	26 329 316 35	26 329 346 35	0. 08 9. 91 0. 85 0. 08	32 36: 40: 42:
Total	365	1.03	4	700	175	736	181	1,02	38
Dumpers Engineers	365 365	1. 08 1. 85	3	647 714	216 357	6F8 1, 321	229 661	1.77 1.96	381 673
Fillera	365 365	1. 13 1. 17	1	276 280	69 289	310 333	78 333	0. 76 0. 79	410 42
Total	365	1.14	5	563	113	643	129	1.55	41.
Fillers, bottom	365 365 365 365	1.00 1.08 1.13 1.17 1.25	7 26 58 5	1, 774 4, 103 311 356	35 68 71 62 178	256 1, 925 4, 613 368 433	37 74 80 74 217	0. 68 4. 86 11. 24 0. 85 0. 96	37 30 41 43 44
Total	365	1.12	93	6, 792	69	7, 505	78	18. 61	400
Fillers, top	365 365 365	1. 13 1. 17 1. 49	2 6 1	135 827 252	138 252	154 990 372	163 372	0.37 2.27 0.69	416 437 538
Total	365	1. 25	9	1, 214	135	1, 516	168	3. 33	450
Filler and sweeper	365	. 87	1	132	132	115	115	0.86	318
Foremen	365 365	1.61½ 2.46	1 2	10.	01 194	150 954	150 477	0. 25 1. 00	600
Total	865	2.30}	3	470	100	1, 104	368	1.31	841
FounderGraderHoi-ter	365 365 365 365	4.52 1.25 1.45 1.07	1 1 1 1 1	366 206 308 84	366 296 308 84	1, 6:0 371 447 90	1,650 371 417 90	1.00 0.81 0.84 0.23	1, 645 457 546 391
Hot-blast men	365 863 365	1.25 1.40 1.49	1 3 3	001 001 031	200 201 218	373 837 963	375 278 322	0. 79 1. 65 1. 79	472 503 539
Total	365	1. 401	7	1,548	221	2, 173	310	4. 23	512
Iron handlers	365 365 365 365	1.00 1.13 1.17 1.25	1 1 4 12	223 518 1, 265	223 130 105	247 615 1, 560	247 154 130	0. C1 0. G1 1. 42 3. 44	363 401 433 454

FABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. E.—Muck Bur Iron: UNITED STATES—Continued.

ESTABLISHMENT No. 7-Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	n for peri	od.	works	ition if nen had innous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of lone.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	ploy es.	Total.	Average.	Total.	Average.	em- ployés.	average earnings per em- ployé.
Laborers	155 155 155 155 155 155	\$0.75 1.00 1.25 1.35 1.37	3 1 32 4 2	21 7 280 76 71	7 7 9 19 36	\$16 7 351 102 98	\$5 7 11 26 49	0. 14 0. 05 1. 81 0. 49 0. 46	\$118 138 194 208 214
Total	155	1, 26	42	455	11	574	13	2.95	196
Machinist	155	1.50	1	144	144	216	216	0.93	283
Masons	155 155	2.75 4.00	1	29 139	29 139	78 554	78 554	0. 19 0. 90	415
Total	155	3. 76	2	168	84	632	316	1.09	583
Millwrights	155 155	1.50 2.00	1	67 28	67 28	100 56	100 56	0.43 0.18	231 310
Total	155	1.64	2	95	48	156	78	0.61	255
Mixers	143 143 143	1. 25 1. 85 1. 25	1 1	153 87 98	38 87 98	191 161 122	48 161 122	1.07 0.61 0.69	179 265 178
Puddlers	143 143 143 143 143 143 143 143 143 143	3.00 3.39 3.621 3.74 4.06 4.251 4.571 4.770 5.14 6.00	11 3 1 7	1 424 1, 218 663 125 43 191 190 43 2	1 71 58 60 42 43 27 32 43	3 1, 438 4, 416 2, 479 506 183 874 907 221 12	3 240 210 225 169 183 125 151 221 12	0. 01 2. 97 8. 52 4. 64 0. 87 0. 30 1. 34 1. 33 0. 30 0. 01	425 485 518 535 579 609 654 683 736 858
Total	143	3.80	58	2, 900	50	11, 039	190	20, 29	544
Puddlers and puddlers' helpers.	143 143	2.443 2.70	1	36 158	36 158	88 427	88 427	0. 25 1. 10	350 386
Total	143	2, 65}	2	194	97	515	258	1.35	380
Puddlers' belpers	143 143 143 143	1. 50½ 1. 74 1. 89 2. 08	17 31 31	54 589 1, 539 63	11 35 50 21	83 1, 024 2, 907 131	17 60 94 44	0, 28 4, 12 10, 76 0, 44	220 249 270 297
Total	143	1.84	56	2, 245	40	4, 145	74	15.70	264
Pullers at squeezers	143	1. 354	7	175	25	237	34	1, 22	194
Rollers	143	3. 19	2	162	81	517	259	1.13	456
Roughers	143 143 143	1.98 2.72 2.74	1 2 3	85 150 161	85 73 54	169 408 442	169 204 147	0, 59 1, 05 1, 13	284 389 393
Total	143	2, 57	-	396	66	1,019	170	2.77	368
Stockers	155 155	1.50 1.88§	2	206 61	103 61	309 115	155 115	1. 33 0. 39	233 292
Total	155	1.59	3	267	89	424	141	1.72	246
Stocker, boss	155 155 155	3. 25 1. 37½ 1. 75	1 1	104 115 316	104 115 79	336 158 550	336 158 138	0.67 0.74 2.04	501 213 270
The establishment	_	2. 38	247	10, 777	- 44	25, 682	104	73. 67	349

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. E.-Muck Bar Iron : United STATES-Continued.

ESTABLISHMENT No. 9.

	Work-	Actual daily earn- ings, or daily		ctual co	ondition	for peri	od.	works	ition if nen had innous yment.
Occupation.	days in the period.	nearest to	Dif- ferent	Day	of done.	Earni	ngs.	Neces	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Aver- age.	sary em- ployés.	earnings per em- ployé.
Ashmen	313 313	\$1.25 1.50	1 2	316 328	316 164	\$394 492	\$394 246	1. 01 1. 05	\$390 470
Total	813	1.371	3	644	215	886	295	2.06	431
Blacksmith Blacksmith' helper Carpenter and millwright Catchers Cindermen Drag-ous Engineers	313 313 213 286 313 286 313	2. 25 1. 40 1. 884 2. 544 1. 25 1. 88 1. 65	1 1 2 4 2 2	136 187 79 446 432 446 635	136 187 79 223 108 223 318	306 264 149 1, 135 538 838 1, 047	306 264 149 568 135 419 524	0. 43 0. 60 0. 25 1. 56 1. 38 1. 56 2. 03	704 443 500 728 390 537 516
Firemen	313 313 313	1. 07 1. 25 2. 00	1 4 1	14 577 273	14 144 273	15 720 537	15 180 537	0.04 1.84 0.87	335 391 616
Total	313	1.47	6	864	144	1,272	212	2.75	461
Hookers-up	286	2.16	2	446	223	964	482	1.58	618
Laborers	313 313 313 313 313 313	.50 1.02 1.121 1.25 1.381 1.50	1 24 44 1 1	51 211 672 4, 733 13 57	51 211 28 108 13 57	26 215 761 5, 873 18 86	26 215 32 133 18 86	0. 16 0. 67 2. 15 15. 12 0. 04 0. 18	160 319 354 388 433 472
Total	213	1. 21}	72	5, 737	80	6, 979	97	18.32	381
Machinists	313 313	2. 25 2. 50	1 3	113 45	113 15	254 114	254 38	0.36 0.14	704 733
Total	313	2.33	4	158	40	368	92	0.50	729
Mason Mason's helper Puddiers	313 313 286	6.37 1.121 3.88	1 11	250 191 2, 502	259 191 227	1,650 216 9,708	1, 650 216 883	0. 83 0. 61 8. 75	1, 994 354 1, 110
Puddlers' helpers	286 286	2. 23½ 2. 42	6 11	651 2, 502	109 227	1, 456 6, 050	243 550	2. 28 8. 75	646 693
Total	286	2. 08	17	3, 153	185	7, 506	442	11.03	681
Roll turner	313 286	6.09± 4.29	1 2	31 446	31 223	189 1, 913	180 937	0.10 1.56	1, 908 1, 227
Rollers' helpers	286 286	1.35 1.42±	2 2	446 446	223	602 636	301 318	1.56 1.56	386 408
Total	286	1.39	4	892	2:23	1, 238	310	3.12	397
Scrappers	286	4.94	5	1, 259	252	6, 221	1,244	4.40	1, 413
Scrappers' helpers	286 286	1.25 3.04	5 5	1, 259 1, 259	252 252	1, 574 3, 829	315 766	4 40	358 870
Total	286	2.14	10	2, 518	252	5, 403	540	8. 80	614
Stockers	286 286	1.35 1.81	3	604 609	221 223	896 1, 211	299 404	2.32 2.34	386 518
Total	286	1.58	- 6	1, 333	222	2, 107	351	4.60	452
Stockers, boss	286 286	2.454 4.10	1 2	223 224	223	547 918	547 459	0.78 0.78	702 1,172

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. E.—Muck Bar Iron: United States—Continued.

ESTABLISHMENT No. 9-Concluded.

Occupation.	Work-	awn'y	A	ctual co	ndition	for perio	od.	workn	ition if nen had nuous yment
Occupation.	days in the period.	rate nearest to average	Dif-			Earnings.		Neces-	Conse- quent
,		daily earn- ings.	om- ploy- és.	ŀ	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Teamsters	313; 313	\$1.25 1.35	1	40 819	40 819	\$49 431	\$49 431	0. 13 1. 02	\$383 423
Total	813	1. 834	3	850	180	480	240	1.15	418
Watchman	365	1.50	1	297	297	446	445	0. 81	548
Weighmen	286 286	1.531 8.121	4	543 245	136 245	883 765	208 763	1. 90 0. 86	439 893
Total	286	2.03	5	788	158	1, 598	820	2.76	580
The establishment		2. 224	169	24, 685	146	54, 886	825	83, 14	660

ESTABLISHMENT No. 17.

Ball boys	286 286	90. 61) 1. 33	2 2	298 298	149 149	\$183 396	902 198	1.04 1.04	\$176 380
Bricklayers	313 313	2. 45 <u>4</u> 8. 00	1	22 186	22 186	54 558	54 558	0. 07 0. 59	768 939
Total	813	2.94	2	208	104	612	306	0.66	921
Bricklayers' helpers	313 813	1. 31 <u>1</u> 1. 50	1	220 186	220 186	289 283	280 283	0. 70 0. 59	411 476
Total	313	1.41	2	406	203	572	286	1. 29	441
Catchers	286	2 74	4	595	149	1, 634	409	2.08	785
Cinder wheelers	286 216	1.25 1.30	11 1	428 41	39 41	535 53	49 53	1.50 0.14	858 870
Total	286	1. 25%	12	469	39	588	49	1.64	856
Drag-outs	286 286	1.83 4.12	4	595 187	149 187	1, 089 770	272 770	2. 68 0. 6 5	521 1, 178
Engineer's helpers	286	1. 75 1. 321	3 21	311	26 156	136 411	45 206	0. 27 1. 09	505 378
Fix grinders	286 286	1. 37 2. 66	8 2	433 298	54 149	596 792	75 396	1.51 1.04	394 760
Laborers Metal breakers Ore stockers	313 286 286	1. 20 2. 00 J. 374	5 5 2	200 750 143	150 72	242 1, 475 195	48 295 98	0. 64 2. 62 0. 50	379 561 200
Puddlers Puddler, boss	286 286	3. 39 ²	104	9, 883 193	95 193	33, 513 659	322 650	34. 56 0. 67	970 970
Puddlers' helpers	286 286	2.11 7.06	104	9, 881 238	95 149	20, 829	200 1. 052	34. 55 1. 04	603 2. 019
Roughers	286 286	3, 32 1, 40	15	298 420	149 28	990 568	495 39	1.04	950 400
The establishment		2.00	284	26, 241	92	a 68, 374	241	9L-48	747

s In addition, \$2.642 was paid to outside persons for labor done at \$1.31 per day, which is included in the statements for this establishment on pages 113 and 593.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. D.—Pig Iron: GREAT BRITAIN.

ESTABLISHMENT No. 36.

1.	Work-	Actual daily earn- ings, or daily		ctual co	ondition	n for peri	od.	works	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dic	Day	s of done.	Earni	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.
Blacksmiths	78 78 78	\$0. 67 .73 .89	1 1 1	74 60 87	74 60 87	\$49 50 78	\$19 59 78	0. 95 0. 88 1. 12	\$52 57 70
Total	78	.77	3	230	77	177	59	2.95	60
Blacksmiths' strikers	78	. 545	3	- 224	75	122	41	2, 87	43
Boiler cleaners	01 91	. 60 . 62	1	98 98	98 98	59 61	59 61	1.08 1.08	53 57
Total	91	. 61	2	196	98	120	60	2.16	56
Boiler feedera	91 78	. 67 . 67	1	182 77	91 77	122 51	61 51	2.00 0.09	61 50
Cinder tappers	91 91	. 73 . 91 j	1 1	91 91	91 91	66 83	66 83	1.00 1.00	83
Total	91	. 82	2	182	91	149	75	2.00	75
Cleaner enginehouse Cleaner, office Cleaner, office Engine tenders, blast Engine tender, electric Engine tender, iift	78 78 78 91 91	. 261 . 261 . 16 . 75 . 69	2 1	78 78 78 182 124 182	78 78 78 91 124 91	21 21 13 137 85 166	21 21 13 69 85 83	1.00 1.00 1.00 2.00 1.36 2.00	21 21 13 66 63
Fillers	91 91 91	1.034 1.054 1.064	1	170 81 87	85 81 87	176 85 92	88 85 92	1. 87 0. 89 0. 96	94 95 96
Total	91	1.04	4	338	85	353	88	3. 72	96
Fillers, cindor	91 91 91	. 775 . 795 . 80	1 1	165 81 75	83 81 75	128 64 60	64 64 60	1. 81 0. 89 0. 82	71 71 73
Total	91	. 78	4	321	80	252	63	3, 52	71
Fillers, coke	91 91	. 62 . 64	4 2	303 156	76 78	188 99	47 50	3.33 1.71	56
Total	91	. 62	6	459	77	287	48	5.04	57
Fillers, mine	91 91 91 91 91 91	. 831 . 86 . 861 . 88 . 89	2	52 154 261 236 173 57	52 77 87 79 87 57	43 132 225 208 154 53	43 66 75 69 77 53	0.57 1.69 2.87 2.59 1.90 0.63	75 78 78 80 81 85
Total	91	. 87	12	933	78	815	68	10. 25	79
Fitters. Fitters' helper Foremen Foreman, engine. Foreman, navvies Hot-blast men	78 78 91 91 91 91	1. 353 1. 353 1. 213 . 99 . 75	2 1 2 1 1 2	170 78 182 91 01 182	85 78 91 91 91	28 247 111 90 137	59 28 124 111 90 69	2.18 1.00 2.00 1.00 1.00 2.00	54 28 124 111 90
Keepers	91 91 91	1. 17 1. 19 1. 20	1 2 1	83 144 74	83 72 74	96 171 89	96 86 89	0. 91 1. 58 0. 81	105 108 109

PART II.-TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

E .- Muck Bar Iron: UNITED STATES-Concluded.

ESTABLISHMENT No. 26-Concluded.

	Work- ing	umiy	A	otual ec	nditio	n for peri	od.	Condition if workmon had continuous employment.		
Occupation.	days in the period.	rate mearest to average	Dif-	Days work	of lone.	Earni	ngs.	Neces-	Conse-	
		daily earn- ings.	ploy- és.	Total.	Aver- age.	Total	Aver-	eary em- ployés.	earnings per em- ployé.	
Roughers	286 286 313 313 313	1.50 2.14 1.50 5.50	22121	406 319 14 290 180	203 155 14 145 180	\$1,015 465 30 435 990	\$508 238 30 218 990	1. 43 1. 08 0. 04 0. 93 0. 58	\$715 429 671 470 1,722	
Teamsters	318 318	1.58 1.80	2 1	25 13	18 13	38 22	19 22	0.08 0.04	47 6 574	
Total	313	1. 62	8	87	12	60	20	0. 12	508	
Watchmen	318 313 813 313 313	1. 25 1. 50 2. 00 2. 15 2. 25	1 1 2 3 1	14 15 345 384 13	14 15 174 128 12	18 22 715 817 27	18 22 358 272 27	0. 04 0. 03 1. 11 1. 23 0. 04	402 459 643 666 704	
Total	813	2.07	8	773	97	1, 599	200	2.47	647	
The establishment		1. 91	272	34, 000	125	s 65, 204	240	117.38	536	

F.-Muck Bar Iron: GREAT BRITAIN.

ESTABLISHMENT No. 36.

Foremen, puddlers	99 99	\$0. 88½ 1. 06 1. 46	1 1 2	99 99 198	90 90 99	\$88 105 280	\$88 105 145	1.00 1.00 2.00	\$88 105 145
Total	99	1. 21	4	396	90	482	121	4.00	121
Forge sweepers and roll scalers Grinding fettlers	99 99	. 74 . 75	2 2	183 280	92 140	135 209	68 105	1.85 2.83	73 74
Iron sorters	99 90	. 951 1. 01	3	406 134	135 134	328 136	129 136	4.10 1.35	95 100
Total	90	. 97	4	540	185	524	181	5.45	96
Watchman Weighmen Wheelers	126 99 99	. 95 <u>1</u> . 88 . 76	1 2 2	135 198 258	185 90 129	129 175 198	129 88 99	1.07 2.00 2.61	120 84 76
The establishment		. 98	17	1, 990	117	b 1, 852	109	19. 81	93

a In addition \$1,697 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 113 and 593.

b The earnings here shown are for only a part of the employes for four mouths. The statement for this establishment on page 113 is for all the employes for one year.

: 1.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. ... G.—Finished Bar Iron: United STATES—Continued.

ESTABLISHMENT No. 8-Concluded.

	Work-	Actual daily earn- ings,or daily		ctual co	od.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	rate nearest to average	Dif-			Earni	Earnings.		Conse- quest
		daily caru- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Stickers-in	299 299 299	\$0.70 .80 1.25	1 2 2	241 293 211	241 147 106	\$168 234 264	\$168 117 132	0. 81 0. 98 0. 71	\$208 239 274
Total	299	. 893	5	745	149	666	133	2.50	267
Straightenera	299 299 299	.70 .80 1.60	7 4 1	717 638 151	111 160 151	544 510 242	78 128 242	2. 60 2. 13 0. 51	209 239 479
Total	299	. 83	12	1,566	131	1,296	108	5.24	247
The establishment		2.44	97	19,043	196	a 46, 423	479	63, 70	729

ESTABLISHMENT No. 9.

Blacksmith's helper Blacksmith's helper Curpenter and millwright Catchers Cinderman Engineers	313 313 286 313 313	\$2. 25 1. 42 1. 88½ 2. 25 1. 25 1. 35	1 1 2 1 2	68 93 79 446 132 440	68 93 79 223 132 220	\$153 132 149 1,004 164 594	\$153 132 149 502 164 297	0. 22 0. 30 0. 25 1. 56 0. 42 1. 41	\$704 444 590 644 389 423
Firemen	313 313 313	1.25 1.40½ 1.80	1 1 1	11 94 259	11 94 259	13 132 463	13 132 463	0. 04 0. 30 0. 83	370 410 560
Total	313	1. 67	3	364	121	608	203	1.17	523
Heaters	286	7.03	2	472	236	3, 318	1, 659	1,65	2, 010
Heaters' helpers	286 286	2.00 3.00	2 4	44G 892	223 223	892 2, 676	446 669	1.56 3.12	572 858
Total	286	2. 661	6	1, 338	220	3, 566	595	4.66	763
Laborers	313 313 313 313 313	1. 12½ 1. 25 1. 40 1. 50 2. 00	26 6 1 1	711 804 322 80 3	27 134 322 80 8	811 1,024 458 122 6	31 171 458 122 6	2. 27 2. 57 1. 03 0. 26 0. 01	357 399 445 477 626
Total	313	1. 26	35	1, 920	55	2, 421	69	6. 14	395
Machinists	313 313	2. 25 2. 50	1 3	113 45	113 15	254 114	254 38	0.36 0.14	704 793
Total	313	2.33	4	158	40	368	92	0.50	729
Roll turner Rollers Rollers' helpers Roughers	313 286 286 286	5. 99 h 10. 77 h 2. 50 3. 68 h	1 2 3 8	148 447 670 1,784	148 224 223 223	887 4, 816 1, 675 6, 576	887 2, 408 538 822	0. 47 1. 56 2. 34 6. 24	1, 876 3, 081 715 1, 054
Shearmen	286 286	2.37 2.64	1	223 223	223 223	528 589	528 589	0.78 0.78	677 755
Total	286	2. 504	2	446	223	1, 117	559	1.56	716

a The carnings here shown include amounts paid a few employee not in the finished bar iron department which it was impossible to exclude. The statement for this establishment on page 127 is for finished bar iron only.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. D.—Pig Iron: GREAT ERITAIN—Concluded.

ESTABLISHMENT No. - - Concluded.

Occupation.	Work-	Actual daily earn-ings, or daily rate		ctual co	adition	for per	iod.	works	ition if nen had nnous yment.
Occupation.	days in the period.		Dif	Day: work		Earni	nga.	Neces	Conse- quent
		daily earn- ings.	ploy- ée.	Total.	ATOP-	Total.	sto Tati	eary em- ployés.	earnings per em- ployé.
Weighmen	135 135 135	\$0. 67 <u>1</u> .71 .77 <u>1</u>		135 185 270	185 135 135	\$91 96 209	\$91 96 105	1.00 1.00 2.00	\$91 96 105
Total	135	. 78}	4	540	185	396	99	4.00	90
The establishment		1.01	187	18, 137	133	a 18, 412	134	134. 36	137

E.-Muck Bar Iron: United STATES.

ESTABLISHMENT No. 7.

Ashmen	155 155	\$1. 30 1. 50	1 2	99 164	99 82	\$135 238	\$135 119	0. 64 1. 06	\$211 225
Total	158	1.42	3	263	88	878	124	1. 70	220
Blacksmith	155 155	2. 30 1. 75	1	108 100	108 40	248 280	248 70	0.70 1.08	856 271
Buggymen	155 155 155	. 664 1. 30 1. 50	1 8 2	91 156	30 78	119 237	40 119	9. 02 0. 59 1. 01	103 203 235
Total	155	1. 43	6	250	42	858	60	1.63	222
Buggyman and puddler	155 135	2. 16 1. 50	1	81 7	31 7	67 10	67 10	0. 20 0. 05	335 221
Catchers	143 143	1. 06 <u>1</u> 2. 441	2 2	89 178	45 89	148 435	74 218	0. 62 1. 24	238 349
Total	143	2. 18	4	267	67	583	146	1.86	312
Cindermen	153 155	1. 25 1. 75	3	87 181	44 60	109 316	55 105	0. 56 1. 17	. 194 271
Total	155	1.58	5	268	54	425	85	1. 73	246
Coal wheelers	155	1. 50	5	208	42	318	63	1.34	233
Drag-outs	· 143	1.70 1.82	8	113 239	38 60	192 436	109	0. 79 1. 67	243 261
	143	1.78	7	352	50	628	90	2.46	255
Engineers	155 143 155	2. 00 2. 86 <u>1</u> 1. 50	3 1 1	203 157 16	68 157 16	410 450 24	137 450 24	1. 32 1. 10 0. 10	310 410 233
Hookers-up	143 143 143	. 06) 1. 23 1. 42	1 9 2	3 317 91	3 83 46	2 390 129	2 43 65	0. 02 2. 22 0. 64	95 176 203
Total	143	1. 27	12	411	74	521	43	2. 88	181

a The earnings here shown, though for only a part of the employés, are thought to be fairly representative.

H.-Finished Bar Iron: GREAT BRITAIN-Continued.

ESTABLISHMENT No. 29-Continued.

Occupation.	Work	Actual daily earn- ings, or daily		ctual ec	od.	works	ition if nen had inuous syment.		
	days in the period	rate nearest to	Dif.	Day	s of done.	Earni	ngs.	Neces-	Consequent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Joiner	108	\$1.20	1	102	102	\$131	\$131	0.94	\$139
Laboreta	108 108 108	.69 .75 .85	1 1	248 144 90	124 144 90	173 109 77	87 109 77	2.30 1.33 0.83	75 82 92
Total	108	. 743	4	482	121	359	90	4.46	80
Peelers	99	1.001	2	215	108	236	118	2.17	109
Pilers	99 99	.79 .81 .83	1 2 1	80 188 88	80 94 88	62 154 73	62 77 73	0.81 1.90 0.89	. 77 81 82
Total	99	. 81	4	256	89	289	72	3, 60	80
Plate layers	99 99	:77	2	230 123	115 123	176 90	88 90	2.32 1.24	76 72
Roll scalers	99 99	. 70	1 2	118 176	118 88	79 123	79 62	1.19 1.78	66 69
Total	99	. 681	3	294	98	202	67	2.97	68
Rollers	99 99 99	1.53 2.384 3.06	2 4 2	173 331 194	87 83 97	265 789 595	133 197 298	1.75 3.34 L.96	152 236 304
Total	99	2.36	8	698	87	1, 649	206	7. 05	234
Rollera' helpera	99 99 99 99 99 99 99 99	. 77 . 85 . 99 1. 01 1. 09 1. 46 1. 58 1. 82 2. 00 2. 19 2. 31	4 4 2 2 4 4 2 4 2	388 368 194 368 136 194 272 346 194 390 194	97 92 97 92 68 97 68 87 97 98 97	299 313 193 373 149 283 430 631 389 854	75 78 97 93 75 142 108 158 195 214 224	3. 92 2. 72 1. 96 3. 72 1. 37 1. 96 2. 75 3. 49 1. 96 3. 94 1. 96	76 84 98 100 108 144 157 181 199 217
Total	99	1. 431	34	3,044	90	4, 362	128	30.75	142
Rollera' helpera (boys)	99 99 99 99	.361 .425 .465 .61	2 4 4 2 1	136 368 368 136 98	68 92 92 68 98	50 157 172 83 65	25 39 43 42 65	1, 37 3, 72 3, 72 1, 37 0, 99	36 42 46 60 66
Total	99	. 475	13	1, 106	83	527	41	11.17	47
Storekeeper	99 99	. 971 1. 214	1	99 127	90 127	96 154	96 154	1.00 1.28	96 120
Warehousemen	108 108	. 89 1. 051	1	108 128	108 128	97 140	97 140	1.00 1.19	97 118
Total	108	1.00}	2	235	113	237	119	2.19	108
Wash heaters helper	99 99	2. 271	2	186 116	93 116	423 83	212 83	1.88 1.17	225 71
Weighmen	99 99	.85 .911 1.15	1 1	110 126 99	110 126 99	94 116 114	94 115 114	1. 11 1. 27 1. 60	85 91 114
Total	99	. 964	3	335	112	324	108	3.38	96

H.-Finished Bar Iron: GREAT BRITAIN-Concluded.

ESTABLISHMENT No. 29-Concluded.

Occupation.	Work-	dany		, Actual condition for period.					Condition if workmen had continuous employment.	
	days in the period.	nearcst	Dif- ferent			Earnings.		Neces-		
		daily earu- ings.	ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.	
Wheelers in	99 99	\$0. 78§ .89	2 2	185 183	93 92	\$145 164	\$73 82	1.87 1.85	\$78 89	
Total	99	.84	4	368	92	309	77	3,72	83	
The establishment		1.25	147	13,894	95	a 17, 393	118	139.63	125	

J.-Steel Ingots: UNITED STATES.

ESTABLISHMENT No. 1.

313 313 313	\$2, 25 2, 45 3, 00	3 1 1	541 192 191	180 192 191	\$1,206 470 574	\$402 470 574	1.73 0.61 0.61	786 786 941
313	2.434	5	924	185	2, 250	450	2.95	761
313	1. 911	8	80	10	153	19	0. 26	500
313 313 313 313 313	1. 331 1. 50 1. 731 2. 791 2. 25	1 6 3 2 1	6 861 458 296 174	6 144 153 148 174	1, 291 794 827 391	8 215 263 414 391	0. 62 2. 75 1. 46 0. 95 0. 56	417 460 543 874 703
313 313 313	1. 35 1. 50 1. 90	4 3 2	327 237 230	82 79 125	416 355 475	112 118 238	1. 04 0. 76 0. 80	427 469 595
313	1. 57	9	814	90	1, 276	142	2 60	491
313 313 313 313 313	1. 66½ 1. 45 1. 50 2. 75½ 2. 46½	1 1 1 1	20 2 15 125	3 20 2 15 125	5 29 3 41 208			522 454 470 856 771
365 365 365 365	1. 63 1. 81 3. 41 8. 23	1 1 1	46 229 269 319	46 229 269 319	75 414 938 2, 625	75 414 938 2, 625	0. 13 0. 63 0. 74 0. 87	595 660 1, 273 3, 004
363	4 60)	4	863	216	4, 052	1, 013	2.37	1, 714
31 3 313	1. 25 1. 00	3	421 16	140 16	529 16	176 16	1. 35 0. 05	293 313
313 313 313	1.38 1.57 1.66½	5 31 3	42 137 6			12 7	0. 13 0. 44 0. 02	433 491 522
313	1. 53	39	185	5	280	7	0. 59	479
313 313 313 313 813	1. 54½ 1. 43 2. 00 1. 50 1. 56‡	14 1 1 1 6	3	3 40 30	709 10 6 60 47 549	51 10 6 60 47	1. 47 0. 02 0. 01 0. 13 0. 10 0. 98	483 447 626 470 490 562
	\$13 \$13 \$13 \$13 \$13 \$13 \$13 \$13	\$13	213	213	213	218 2.45 1 192 192 470 313 2.434 5 924 185 2.250 313 1.914 6 80 10 153 312 1.334 1 6 6 8 213 1.50 6 861 144 1,291 313 1.734 3 458 153 794 313 2.794 2 296 148 8.27 313 1.50 3 227 79 355 313 1.50 3 227 79 355 313 1.50 3 227 79 355 313 1.50 3 227 79 355 313 1.50 3 227 79 355 313 1.651 1 20 20 22 313 1.651 1 20 20 22 313	213 2.45 1 192 192 470 470 313 2.43½ 5 924 185 2,250 450 313 1.91½ 8 80 10 153 19 312 1.33½ 1 6 86 144 1,291 215 213 1.50 6 861 144 1,291 203 313 794 203 313 2.70½ 2 296 148 8.7 414 203 313 7.94 203 313 1.50 3 237 79 355 118 312 3.150 3 237 79 355 118 313 1.50 3 237 79 355 118 313 1.50 3 237 79 355 118 313 1.50 3 237 79 355 118 313 1.50 3 237 79 355 118 313	213

[@] The earnings here shown are for four months only. The statement for this establishment on page 127 is for one year.

J .- Steel Ingots: UNITED STATES-Continued.

ESTABLISHMENT No. 1-Continued.

Occupation.	Work-	Actual daily earn- ings, or daily	A	ctual co	works	ition if nen had inuous syment.			
	days in the period.	rate pearest to	Dif- ferent	Day:	of lone.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- ée.	Total.	Aver- age.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Conductors	313 313 313 313	\$1.50 1.78 2.02 2.17	13 4 1 1	691 90 102 29	53 25 102 29	\$1,030 176 207 63	379 44 207 63	2. 21 0. 32 0. 33 0. 09	\$467 556 635 680
Total	313	1. 00}	19	921	48	1, 476	78	2.95	502
Conductors and engineers	313 313	1. 72 1. 93	3	436 14	145 14	751 27	250 27	1.39 0.04	539 604
Total	313	1. 73	4	450	113	778	195	1.43	541
Conductor and fireman	313 313 313 313 313	1. 70 1. 45 2. 09 1. 66 1. 12	1 4 1 1 2	10 274 128 124 247	10 69 128 124 124	17 399 268 206 282	17 100 268 206 141	0. 03 0. 88 0. 41 0. 40 0. 79	532 456 655 520 357
Cranemen, hydraulio	313 313 313 313	1. 40 1. 721 1. 921 2. 291	3 4 1 6	10 130 13 854	3 33 13 142	224 25 1, 961	5 56 25 327	0. 03 0. 42 0. 04 2. 73	438 539 602 719
Total	313	2. 21	14	1,007	72	2, 224	159	3. 22	691
Cranemen, scrap	313 313	1.35 1.45	6 2	142 29	24 15	191 42	32 21	0. 45 0. 00	421 453
Total	313	1.30}	8	171	21	233	29	0.54	426
Cranemen and laborers	313	1.40	2	69	35	103	52	0.22	467
Cranemen and mould coolers	313 313	1. 441	1	122 28	122 28	176 49	176 49	0. 39	452 548
Total	313	1.50	2	150	75	225	113	0.48	470
Cranemen and mouldmen	313 313 313	1.864 2.164 2.364	3 1 1	225 144 77	75 144 77	420 312 182	140 312 182	0. 72 0. 46 0. 25	584 678 740
Total	313	2,05	5	446	89	914	183	1.43	611
Craneman and oiler	313	1.49	1	65	65	97	97	0.21	467
Crancmen and runners	313 313	1.66 1.91	2	269 152	135 152	446 296	223 296	0.86 0.49	519 610
Total	313	1.76	3	421	140	742	247	1.35	552
Cruebers	313	1, 35	3	136	45	183	61	0.43	421
Driera	313 313	1.25 1.35	1 2	185 158	185 79	232 215	232 108	0. 59 0. 50	393 420
Total	313	1.30	3	343	114	447	149	1.09	408
Dropmen Dumpers Dumpers and iron handlers Dumper and laborer		1.51 1.31 1.50± 1.30	10 3 1	188 1,403 70 10	94 140 26 10	284 1, 835 119 13	142 184 40 13	0.60 4.48 0.25 0.03	473 409 471 407

H. Ex. 265-22

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 1-Continued.

Occupation.	Work ing daily		A	ctual co	ndition	for peri	od.	works	ition if nen had innous syment.
	days in the period.		Dif- ferent	Day work	s of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Engineera	313 313 313 313 313 313 313	\$1.35 1.50 1.70 1.75 1.80 2.00 2.27	1 1 2 3 2 1 2 2	86 16 217 315 457 20 306	86 14 109 105 229 20 153	\$117 23 369 550 818 40 694	\$117 23 185 183 409 40 317	0. 27 0. 05 0. 69 1. 01 1. 46 0. 06 0. 98	\$426 450 532 547 560 626 710
Total	313	1. 844	12	1,417	118	2, 611	218	4.52	577
Engineers, locomotive	313	2.15	7	249	36	535	76	0.80	673
Engineers and laborers	313 313	1.46 1.83	3	98 18	33 18	143 33	48 33	0.31	457 514
Total	313	1, 51	4	116	29	176	- 44	0.37	475
Engineer and rigger	313 313	1. 91± 2. 35	1 2	205 259	205 130	393 609	393 303	0. 65 0. 83	600 736
Firemen	313 313 313	1. 82 2. 00 2. 10	2 6 4	22 54 482	11 9 108	40 108 893	20 18 223	0.07 0.17 1.38	509 626 647
Total	313	2.05	12	508	42	1, 041	87	1,62	641
Fireman and laborer	313 313 313 365 365	1.50 1.94 1.78 4.44 4.73	1 1 1 1 2	50 18 105 732	50 18 1(5 366	3 97 32 460 3,461	3 97 32 466 1, 731	0. 01 0. 16 0. 06 0. 29 2. 01	470 607 556 1, 620 1, 726
Foremen, iron handlers	313 313	1.81± 2.00	1	208 248	208 248	378 496	378 496	0.66	589 626
Total	313	1.015	2	456	228	874	437	1.45	600
Foremen, laborers	365 365	1.83 3.25	1	12 105	12 105	22 311	22 341	0. 03 0. 29	1, 185
Total	365	3.10	2	117	59	363	182	0. 32	1, 132
Foreman, mixers. Foreman, stockers Inspector, mould Inspector, stock	313 313 313 313 313	2. 65 4. 07 2. 70 1. 25 2. 25	1 1 1 1 1	257 138 61 192 136	257 138 61 192 136	681 563 165 210 300	681 562 165 240 300	0. 82 0. 44 0. 19 0. 61 0. 43	829 1, 273 847 391 690
Iron handlers	313 313 313 213	1. 174 1. 47 1. 664 2. 20	8 12 38 3	23 72 1, 918 5	3 6 50 2	27 106 3, 198 11	3 9 81 4	6. 07 0. 23 6. 13 0. 02	367 461 522 689
Total	313	1. 65	61	2, 018	33	3, 342	55	6. 45	518
Ifon handlers and laborers	313 313 313	1.43 1.52 2.00	13 1 1	322 23 9	25 21 9	460 35 18	35 35 18	1. 03 0. 07 0. 03	447 476 626
Total	313	1.45	15	354	24	513	34	1,13	454
Iron handler and screener Iron handler and stocker Iron handlers and unloaders	313 313 313 365	1.39	1	46 37 111	46 3	GL 4 53	64	0.15 0.01 0.12	435 417 463 184

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TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued, J .- Steel Ingots: UNITED STATES-Continued,

ESTABLISHMENT No. 1—Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Laborera	313 313 313	\$1, 25 1, 35 1, 50	159 25 2	2, 695 1, 398 30	17 56 15	\$3,396 1,897 45	\$21 76 23	8. 61 4. 47 0. 10	\$394 425 470
Total	313	1.20}	186	4, 123	22	5, 338	29	13. 18	405
Laborers and ladlemen	313 313	1.601 2.00	1	33 17	33 17	53 34	53 34	0. 11 0. 05	503 626
Total	313	1.74	2	50	25	87	44	0.16	545
Laborers and lifters Laborer and mouldman Laborers and oilers Laborer and pit cleaner Laborers and runners	313 313 313 313 313	1.394 1.674 1.43 1.354 1.69	2 1 2 1 2	338 34 228 14 13	169 34 114 14 7	471 57 326 19 22	236 57 163 19 11	1.08 0.11 0.73 0.04 0.04	436 525 448 425 530
Laborers and scrapmen	313 313 313	1. 50½ 1. 78 2. 09½	6 3 1	67 36 179	11 12 179	103 64 375	18 21 375	0. 21 0. 12 0. 37	491 556 656
Total	313	1.93	10	282	28	544	54	0.90	604
Laborers and stockers	313	1. 531	3	67	22	103	34	0, 21	481
Laborers and unloaders	313 313	1.39	9 2	179 183	20 92	250 292	28 146	0.57 0.58	437 499
Total	313	1.49}	11	362	33	542	49	1.15	469
Laborer and vessel tender	313	1. 454	1	209	209	304	304	0, 67	455
Ladle stoppers	313 313 313	1. 25 3. 703 4. 455	2 1 1	164 11	164 11	5 608 49	608 49	0. 01 0. 52 0. 04	391 1, 160 1, 394
Total	313	3.70	4	179	45	662	166	0.57	1, 158
Ladlemen	313 313 313 313 313	1. 35 2. 37 2. 61 2. 80 2. 80 3. 48	2 4 2 2 2 2	161 569 218 223 237	81 142 109 112 119	1, 350 577 639 826	108 338 289 320 413	0.51 1.82 0.70 0.71 0.76	418 743 828 897 1, 091
Total	313	2.56	12	1,408	117	3, 607	301	4.50	802
Ladleman and mouldman Ladleman and pit cleaner Ladleman and runner	313 313 313	2. 61 1 1. 62 1. 66	1	80 119 3	80 119 3	209 193 5	209 193 5	0. 26 0. 38 0. 01	818 508 522
Ladlemen and scrap cleaners	313 313	1.541	1	137 37	137 37	212 69	212 t9	0.44	184 584
Total	313	1. 61	2	174	87	281	141	0. 56	505
Liftmen	313	1. 35	3	492	164	674	225	1, 57	429
Machinists	313 313 313 313	2.00 2.25 2.45 2.50	3 1 7 1	259 17 347 20	86 17 50 20	313 38 850 50	172 38 121 50	0. 83 0. 05 1. 11 0. 06	622 700 767 783
Total	313	2, 26	12	QF:3	54	1, 453	121	2. 05	707
Machinists' helpers	313	1. 25 1. 31	4	33 29	8 29	44 38	10 38	0.11 0.00	359 410

J.-Steel Ingots: UNITED STATES-Continued.

-STABLISHMENT No. 1—Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for peri	od.	work	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- es.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.
Manganese heaters	313 313	\$1.35 1.46	1	66 226	66 226	\$89 331	\$89 331	0. 21 0. 72	\$422 458
Total	313	1.44	2	292	146	420	210	0.93	450
Manganese heater and scrap- man.	313	1.475	1	149	149	220	220	0.48	462
Masons	313 313 313 313	2.20 3.142 3.25 4.00	1 1 4 2	5 7 62 45	5 7 16 23	11 22 202 181	11 22 51 91	0.02 0.03 0.20 0.14	689 984 1,020 1,259
Total	313	3. 49	8	119	15	416	52	0.38	1, 094
Masons' helpers	313	1.50 1.624	7	429 20	61 20	648 33	93 33	1.37 0.06	473 516
Total	313	1.51	8	449	50	681	85	1.43	475
Master mechanic	365	6.584	1	319	319	2, 100	2, 100	0.87	2, 403
Melters	313 313	3. 31 3. 90	1	269 10	135 10	891 39	446 39	0. 80	1, 037 1, 221
Total	313	3. 334	3	273	93	930	310	0.89	1,043
Mould coolers	313 313 313	2.54 1.35 1.70	1 8 1	50 240 26	50 30 26	127 326 45	127 41 45	0. 1G 0. 77 0. 08	795 425 542
Moaldmen	313 313 313 313 313 313 313	2, 00 2, 23 2, 50 2, 87† 3, 08 3, 32 3, 53†	1 1 2 7 10 4	123 91 10 911 1,089 425 123	123 91 5 130 109 106 123	245 200 25 2, 618 3, 353 1, 412 435	245 200 13 374 335 353 435	0. 39 0. 29 0. 03 2. 91 3. 48 1. 36 0. 39	623 648 783 899 964 1, 040 1, 107
Total	313	2.99	26	2, 772	107	8, 288	319	8, 25	936
Mouldman and scrap cleaner . Mouldman and scrapman	313	2, 594 1, 985	1	42 74	42 74	109 147	109 147	0. 13 0. 24	812 622
Oilers	313 313	1.25 1.40	3	100 223	53 108	-201 455	67 152	0.51 1.03	393 441
Total	313	1. 36	6	483	81	656	109	1.54	425
Painters	313 313	1.50 1.75	1	25 11	13	38 19	19 19	0.04	476 541
Total	313	1, 58	3	36	12	57	19	0.12	498
Panhouse men	313 313	1.35 1.40	3 6	593	92 99	374 826	125 137	0. 84 1. e9	423 435
Total	313	1.37}	9	870	97	1, 198	133	2.77	431
Panhouse man and scrapman .	313	1. 50	1	2	2	3	3	0. 01	470
Pipe fitters	313 313 313	1.50 1.75 2.37	. 1	45 23 35	8 7 3 3 7 3	71 100 82	05 109 82	0, 15 0, 26 0, 11	544
Total	313	1.81	4	161	40	292	73	0.53	564

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 1-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	d.	work	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	per em- ployé.
Pit cleaners	313 313	\$2.41 1,60	11 2	1, 045 402	95 201	\$2, 521 649	\$220 325	3.34 1.28	\$785 508
Riggers	313 313	1.50 2.00	1	29 23	15 23	44 47	22 47	0.09 0.07	473 640
Total	313	1.75	3	52	17	91	30	0.16	548
Roofer	313	1.37}	1	79	79	108	108	0.25	428
Runners	313 313 313 313	1.834 2.29 2.449 3.00	1 4 4 1	228 383 6	57 96 6	522 937 18	11 131 234 18	0. 02 0. 73 1. 22 0. 02	574 717 766 905
Total	313	2.39	10	623	62	1, 488	140	1.99	748
Runner and scrap cleaner Runner and slagman. Runners and spiegel melters' helpers.	313 313 313	1.70 1.92 2.428	1 1 2	20 25 131	20 25 66	34 48 318	34 48 159	0.06 0.08 0.42	535 601 760
Scrap boys	313 313 313	.75 .80 1.00	1 5 1	73 146 13	73 29 13	54 119 13	54 24 13	0. 23 0. 47 0. 04	233 253 313
Total	313	. 80	7	232	33	186	27	0.74	251
Scrap cleaners	313 313	1.35 1.45	22 3	681 175	31 58	925 252	42 84	2. 18 0. 56	425 451
Total	313	1.374	25	856	34	1, 177	47	2.74	430
Scrap cleaner and spiegel melt- er's helper.	313	1.80	1	91	91	164	164	0. 20	564
Scrap cleaners and stockers	313 313	1.56½ 1.95	1	97 168	97 168	152 328	152 328	0. 31 0. 54	490 611
Total	313	1. 81	2	265	133	480	240	0.85	567
Scrapmen	313 313 313 313 313 313 313	1. 25 1. 35 1. 50 1. 84 1. 994 2. 264 2. 854	10 2 3 7 15 3	64 3 153 211 369 30 7	51 30 25 10	82 4 230 388 736 68 20	8 2 77 55 49 23 10	0. 20 0. 01 0. 49 0. 67 1. 18 0. 10 0. 02	401 417 471 576 624 706 894
Total	313	1.823	42	837	20	1, 528	36	2.67	571
Scrapmen and unloaders	313	1.80	2	10	5	18	9	0.03	563
Scrapmen and water carriers.	313 313	1.40 1.82	1 2	10 11	10 6	14 20	14 10	0.03 0.04	425 560
Total	313	1. 62	3	21	7	34	11	0.07	507
Screeners	313	1,43	2	7	4	10	5	0.02	44
Slagmen	313 313	1.40 1.58	1	87 126	44 126	118 200	59 200	0. 28 0. 40	423
Total	313	1.49	3	213	71	318	106	0.68	467
Slarry mi sers	313	1.35	4	248	62	833	83	0.79	420

G.-Finished Bar Iron: UNITED STATES-Concluded.

ESTABLISHMENT No. 9-Concluded.

	Work-	dauy	A	ctual co	ndition	for peri	od.	workn	tion if ien had nuous yment.
Occupation.	days in the period.	daily	Dif- ferent			Earnings.		Neces-	Conse- quent
			eni- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Shearmen's helpers	286 286	\$1. 25 1. 75	2 2	446 442	223 223	\$558 774	\$279 387	1.56 1.55	\$358 500
Total	286	1.50	4	889	323	1, 332	333	3. 11	429
Stickers-in Straighteners	286 286	1.50 1.35	8	447 1, 338	224 223	671 1,806	236 201	1.56 4.68	429 386
The establishment		2. 681	86	11, 679	136	31, 359	365	39, 82	788

H.—Finished Bar Iron: GREAT BRITAIN.

ESTABLISHMENT No. 29.

Bar lifters and stock takers	99	\$1.09) 1.13	8	312 115	104 115	\$343 131	\$114 181	2. 15 1. 16	\$109 113
Total	99	1.11	4	427	107	474	119	4. 31	110
Bogie men	99	. 971	8	279	98	272	91	2. 82	97
Box pile makers	99 98	1. 03) 1. 21	1	117 103	117 103	122 125	122 125	1. 18 1. 04	103 120
Total	99	1. 124	2	220	110	247	124	2. 22	111
Bundlers and stock takers	99 99 90	. 87) 1. 09) 1. 18 1. 47)	1 5 4 1	87 567 440 111	87 113 110 111	76 622 519 164	76 124 120 164	0. 88 5. 73 4. 44 1. 12	86 109 117 146
Total	99	1.14	11	1, 205	110	1, 381	126	12. 17	113
Chargers	99	. ₩	5	540	108	875	75	5. 45	09
Cutters-down	99 99	1. 211 1. 25	1 2	99 193	99 97	121 244	121 122	1. 00 1. 95	121 1 25
Total	99	1.25	3	292	97	365	128	2. 95	124
Foreman, bundlers and stock takers.	99	1. 941	1	99	99	193	193	1.00	193
Foreman, mill	99 99	1.46 2.54	1	99 99	99 99	145 850	145 350	1. 00 1. 00	145 350
Heaters	99 99 99	1. 85 2. 00 2. 37	9 1 6	742 83 477	82 83 80	1, 377 167 1, 132	153 167 189	7. 49 0. 84 4. 82	184 199 235
Total	99	2.05}	16	1, 302	81	2, 676	167	13. 15	203
Heaters' helpers	99 99	1.091 .97	10 2	800 191	80 96	875 187	88 94	8.08 1.93	108 97
Horsemen	99 99	. 81 1. 06	1	125 99	125 99	101 105	101 105	1.26 1.00	8 0 105
Total	99	. 92	3	224	112	206	103	2.26	91

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. J.—Steel Imgots: United States—Continued.

ESTABLISHMENT No. 2-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for peri	od.	works	ition if nen had inuous syment,
Occupation.	days in the period.	rate nearest to average	Dif-	Day:	of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy. és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Coke wheelers Coke wheelers and laborers	132 144	\$2.18 1.86	2 2	148 156	74 78	\$323 290	\$162 145	1.12 1.08	\$285 265
Cupolamen	132 132	2.741 4.56	2 2	154 162	77 81	423 739	212 370	1.17 1.23	360 600
Total	132	3.67	4	316	79	1, 162	291	2.40	48
Engineers	144 132	2.10 2.40	1 2	177 244	177 122	372 576	372 288	1.23 1.85	303 313
Total	137	2.25	3	421	140	948	316	3, 08	30
Engineers, fan	132 132	1.60 1.90	1 2	88 259	F8 130	140 482	140 241	0.67 1.96	210
Total	132	1.79	3	347	116	622	207	2.63	23
Foremen, pitmen	132	4.49	2	202	101	907	454	1. 53	593
Laborera	144 144 144 144 144 144 144	1.40 1.50 1.55 1.60 1.65 1.711 2.00	26 10 3 27 4 3 2	1, 424 836 181 1, 037 258 380 174	55 84 60 38 65 127 87	2,005 1,238 280 1,660 426 652 355	77 124 93 61 107 217 178	9.89 5.81 1.26 7.20 1.79 2.64 1.21	201 211 222 231 231 244 29-
Total	144	1.54	75	4, 290	57	6, 616	88	29.80	22
Laborer and ladle liner Laborers and metal wheelers Laborers and vessel cinders Laborer and weighman	144 144 144 144	1. 973 1. 84 2. 094 1. 61	1 2 2 1	110 94 219 116	110 47 110 116	217 173 459 187	217 87 230 187	0. 76 0. 65 1. 52 0. 81	284 263 303 233
Ladle liners	132 132 132 132 132 132 132 132	1. 164 1. 81½ 2. 13 2. 48½ 2. 82½ 3. 06 3. 26	1 5 1 2 2 1	6 65 343 70 138 195 97	6 65 69 70 69 98 97	7 118 730 174 390 597 316	7 118 146 174 195 299 316	0. 05 0. 49 2. 60 0. 53 1. 05 1. 48 0. 73	15- 24- 28- 32- 37- 40- 43-
Total	132	2.55	13	914	70	2, 332	179	6. 93	337
Ladle liners and pushers	132	2.001	2	157	79	316	158	, 1.19	266
Ladle liners and vessel cinders.	132 132	2.00 2.34	1	11 26	11 26	22 61	22 61	0. 08 0. 20	264 310
Total	132	2. 241	2	37	19	53	42	0.28	296
Ladle liner and vessel repairer. Manganese heaters. Manganese heaters' helpers Master mechanic	132 132 132 144	1.391 3.60 2.64 3.50	1 4 2 1	28 343 218 182	28 86 109 182	1, 234 576 637	39 309 288 637	0.21 2.60 1.63 1.26	184 475 345 504
Mechanics	144 144	2.184 2.40	1	153 160	153 160	334 385	334 385	1.06 1.11	314 347
Total	144	2. 29	2	313	157	719	260	2.17	331
Mechanics' helper	144	1.50	1	104	104	158	158	0. 72	219
Metal wheelers	132 132	2. 26½ 2. 39	6 7	415 532	74 76	1,008 1,272	168 182	3.37 4.03	299
Total	132	2.334	13	977	75	2, 280	175	7.40	308

J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 1—Concluded.

	Working	Actual daily earn- ings, or daily		ctual co	ndition	for peri	od.	works	ition if nen bad inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif-	& Day work	s of done.	Earn	ings.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Steel pourers	313	\$3.14	2	253	127	\$796	\$308	0. 81	\$985
Stockers	313 313 313 313 313 313	1.381 1.814 1.96 2.15 2.414 2.78	3 5 11 16 1	13 164 544 1,436 12 123	4 33 49 90 12 123	18 298 1,065 3,086 20 342	6 60 97 193 29 342	0.04 0.52 1.74 4.59 0.04 0.39	433 569 613 673 756 870
Total	313	2.11	37	2, 202	62	4, 838	131	7. 32	661
Stocker and unloader Stone breaker Stone wheelers Storekeepers Sweeper Tappers, cupols Tester. Timekeeper	313 313 313 313 313 313 313 313 313 365	1.665 1.824 1.784 1.64 1.50 1.441 3.061 7.00 2.48	3	3 149 235 402 147 9 499 20 327	3 149 118 134 147 9 125 20 327	5 272 419 660 214 13 1,530 140 844	5 272 210 220 214 13 383 149 844	0. 01 0. 48 0. 75 1. 28 0. 47 0. 03 1. 59 0. 06 0. 90	522 571 558 514 456 452 960 2, 191 942
Transfermen	313 313 313	1.664 1.974 2.42	1 1	87 67	3 87 67	10 172 162	5 172 162	0. 02 0 28 0. 21	522 619 757
Total	313	2.15	4	160	40	344	86	0.51	673
Unloaders	313	1.58	11	216	20	342	31	0.69	400
Vessel tenders	313 313	1.35 1.50	3 4	104 105	35 26	139 154	46 39	0. 33 0. 34	418 459
Total	313	1.40	7	209	30	293	42	0. 67	439
Vesselmen	313 313 313	2.70 3.40 3.90	9 1 1	1, 247 171 128	143 171 128	3, 478 581 500	386 581 500	4. 11 0. 55 0. 41	846 1,063 1,223
Total	313	2.87	11	1,586	144	4, 550	414	5, 07	900
Watchmen	365 365 365	1. 20 1. 50 3. 00	. 11	107 248 105	107 26 105	129 400 315	129 39 315	0. 29 0. 79 0. 29	440 545 1, 095
Total	. 365	1.75	13	500	- 28	874	67	1. 37	638
Water carriers	. 313 313 313	1. 35 1. 50 1. 80	2 3	357 278 407	51 139 136	487 416 733	70 20 8 244	1. 1 4 0. 8 9 1. 20	427 468 564
The establishment		2.02	921	49,048	53	99, 891	108	155, 29	643
	I	STABL	ISHM	ENT N	o. 3 .				
Bottom builders	132 132	\$2. 69 3. 25	3 2	187 211	94 106	\$503 686	\$252 343	1. 42 1. 60	\$355 429
Total	132	2. 98	4	398	100	1, 189	297	3. 02	394
Cinder tapper and manganese heater.	132	2. 25 2. 93 ₁		7 8 80	78 80	175 2J5	175 235	0. 39 0. 61	296 388
Cinderman and resselman	132	2.06	1	115	115	306	306	0. 87	251

J .- Steel Ingots: UNITED STATES-Continued.

ESTABLISHMENT No. 2-Continued.

ing days	days rate	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous oyment.
in the	nearest	Dif-	Day:	of lone.	Earn	lngs.	Neces-	Conse- quent
	daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em-	earnings per em- ployé.
132 144	\$2,18 1.86	2 3	148 156	74 78	\$323 290	\$162 145	1.12 1.08	\$288 268
132 132	2.743 4.56	2 2	154 162	77 81	423 739	212 370	1.17 1.23	363 602
132	3, 67	4	316	79	1, 162	291	2.40	485
144 132	2.10 2.40	1 2	177 244	177 122	372 576	372 288	1.23 1.85	303 312
137	2.25	3	421	140	948	316	3.08	308
132 132	I. 60 1, 90	1 2	88 259	F8 130	140 482	140 241	0.67 1.96	210 246
132	1. 79	3	347	116	622	207	2.63	237
132	4. 49	2	202	101	907	454	1.53	593
144 144 144 144 144 144 144	1. 40 1. 50 1. 55 1. 60 1. 65 1. 711 2. 00	26 10 3 27 4 3	1, 424 836 181 1, 037 258 380 174	55 84 60 38 65 127 87	2, 005 1, 238 280 1, 660 426 652 355	77 124 93 61 107 217 178	9.89 5.81 1.26 7.20 1.79 2.64 1.21	203 213 223 231 238 247 294
144	1.54	75	4, 290	57	6, 616	88	29.80	222
144 144 144 144	1. 971 1. 84 2. 091 1. 61	1 2 2 1	110 94 219 116	110 47 110 116	217 173 459 187	217 87 230 187	0. 76 0. 65 1. 52 0. 81	284 265 302 232
132 132 132 132 132 132 132 132	2.13	5	6 65 343 70 138 195 97	65 69 70 69 98 97	7 118 730 174 390 597 316	7 118 146 174 195 299 316	0, 05 0, 49 2, 60 0, 53 1, 05 1, 48 0, 73	154 240 281 328 373 404 430
132	2.55	13	914	70	2, 332	179	6.93	337
132	2,001	2	157	79	316	158	. 1.19	266
132 132	2.00 2.34	1	11 26	11 26	22 61	22 61	0. 08 0. 20	264 310
132	2.24	2	37	19	83	42	0.28	296
132 132 132 144	1.39½ 3.60 2.64 3.50	1 4 2 1	28 343 218 182	28 86 109 182	1, 234 576 637	39 309 288 637	0. 21 2. 60 1. 63 1. 26	184 475 349 504
144 144	2.184 2.40	1	153 160	153 160	334 385	334 385	1.06 1.11	314 347
144	2. 294	2	313	157	719	260	2.17	331
144	1.50	1	104	104	158	158	0.72	219
132 132	2, 263 2, 39	6 7	415 532	74 76	1,008 1,272	168 182	3.37 4.03	299 316
	132 days in the period. 132 144 132 132 132 132 132 134 144 144 144 144 144 144 144 144 144	Work- ing days in the period. 132 \$2.18 144 1.86 132 2.74 132 4.56 132 3.67 144 2.10 137 2.25 132 1.60 132 1.79 133 1.79 144 1.50 144 1.55 144 1.65 144 1.65 144 1.70 144 1.84 144 2.09 144 1.81 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 132 1.16 133 1.16 133 1.16 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50 134 1.50	Work- ing and continue of the period. 132	Work ing day Company Work-ings, or desily days in the period. Work done. Total. Average.	Work ing days in the period. Total Average daily ployings. Total Average daily Total Tot	Work ings of to period daily rate to period daily earn-ings.	North Compared C	

J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 2—Concluded.

,	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous oyment.
Occupation.	days i: he period.	nearest to average	Dif- ferent	Days work		Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Pitmen	132 132	\$3.52 3.62}	- 6	538 848	90 94	\$1, 894 3, 073	\$316 341	4. 08 6. 42	\$165 478
Total	132	3.58}	15	1, 386	92	4, 967	331	10.50	473
Pitman and pusher	132	2 33	1	112	112	261	261	0.85	308
Pitmen and sanders	132 132	2.78 3.07	1	109 94	109 94	303 289	303 280	0.83 0.71	367
Total	132	2.91	2	203	102	592	296	1.54	385
Pitmen and vessel cinders	132	3.06	2	203	102	622	311	1.54	404
Pushers	132 132	2.19 2.28	1	78 18	78 18	171 41	171 41	0.50 0.14	289 301
Total	132	2.21	2	96	48	212	106	0.73	293
Pushers and sanders Pushers and vessel cinders	132 132	2. 154 2. 54§	2 2	186 33	93 17	401 84	201 42	1.41 0.25	285 336
Regulators	132 13.	2.10 2.74	7 2	636 218	91 109	1, 336 597	191 299	4. 82 1. 65	277 361
Total	132	2. 261	9	854	95	1, 933	215	6. 47	299
Regulator and test boy	132	1. 671	1	101	101	169	169	0.77	221
Stopper carriers and stopper setters.	132 132	3. 401 3. 631	4	318 99	80 99	1, 083 358	271 358	2. 41 0. 75	470 477
Total	132	3. 45}	5	417	83	1, 441	288	3.16	456
Stopper carrier and vessel cin- der.	132	2.94	1	95	95	280	280	0. 72	389
Test boys	132	1.60	4	142	36	226	57	1.08	210
Vessel cinders	132 132	2.37 2.80		32 132	32 66	76 370	76 185	0.24 1.50	314 370
Total	132	2.72	3	164	55	446	149	1, 24	359
Vessel repairer	132	2,40	1	32	32	77	77	0, 24	318
Vessel scrapers	132 132 132	1.00 1.61 2.17	1 2 2	13 190	4 7 95	21 412	11 206	0.03 0.10 1.44	133 213 286
Total	132	2.11	5	207	41	437	87	1.57	279
Vesselmen	132 132 132	2.84 3.104 4.474		204 36 220	102 36 110	579 115 984	290 115 402	1.55 0.27 1.67	375 421 500
Total	132	3. 65	5	460	92	1, 678	336	3. 49	483
Water boys	132	, 70	9	368	41	258	20	2.79	93
Weighmasters	132 132	1. 80 2. 65	1 3	70 172	70 57	125 456	125 152	0, 53 1, 30	236 350
Total	132	2.40	4	242	61	581	145	1.83	317
The establishment		2.35	218	15,664	72	436, 818	169	115.08	320

a The earnings here shown are for only a part of the employes for twenty-four weeks. The statement for this establishment on page 153 is for all the employes for twenty-five weeks.

J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 5.

-	Work-	daus	1	ctual co	od.	Condition workmen h continuou employmen			
Occupation.	days in the period.	Dearest	Dif.	Day:	of done.	Esrni	ngs.	Neces-	Conse- quent
•		daily earn- ings.	em- ploy. és.	Total.	Aver- agu.	Total.	Avor-	eary em- ployés.	earnings per em- ployé.
Bricklayers	132 133	\$3.00 4.00	8 9	4 13	1	\$12 53	\$4.	u. 03 0. 10	\$396 538
Total	132	3, 824	12	17	1	65	5	0. 13	503
Bricklayers' helpers	132 132	1.50 1.10	2 2	2 176	1 88	3 194	2 97	0. 02 1. 33	198 146
Foreman	132	4.00	ī	132	132	624	524	1.00	524
Gasmakers	132	2.50	2	299	150	748	874	2, 27	330
Gasmakers' bolpors	132	1.60	4	305	76	493	123	2.31	213
Laboreta	132	1. 25	5	92	18	116	23	0.70	166
Laborer and pitmen's helper	132	1.43	1	14	14	20	20	- 0.11	180
Ladlemen	132 132	1.70 1.91	1	31 99	99 31	164 59	164 59	0. 75 0. 23	219 251
Total	132	1.71	2	130	6.5	223	112	0. 98	226
Ladlomen's helpers	132	1. 324	2	167	56	221	74	1. 27	175
Ladlemen's helper and pit- men's holper.	132	1.64	ĭ	117	117	192	192	0. 89	217
Melter	132	8.03	1	135	135	409	409	1.02	400
Melter and melter's helper	132	2. 284	1	119	119	272	272	0.90	302
Melter's helpors	132	1.81	2	142	71	257	129	1.08	239
Pitmen	132	1.691	2	222	111	376	188	1. 68	224
Pitmen's helpers	132 132	1. 25 1. 41}	6	78 245	13 61	98 847	16 87	0.59 1.86	160 187
Total	132	1. 38	10	323	32	445	45	2.45	183
Pampmen	132	1.50	5	200	40	301	60	1. 52	190
Stockers	132	1. 351		50 L	36	G79	49	3. FO	179
Toster	132	1.54		81	81	125	125	0. 61	204
The establishment		1. 781	71	3, 174	45	a 5, 663	80	24.07	236

ESTABLISHMENT No. 7.

A shmen	230	\$1.55	4	21	5	\$33	\$8	0.00	. \$361
Blowers	230	2.80	1	9	9	25	25	0.04	639
	230	3. 85	1	121	121	465	. 465	0. 53	884
	230	4. 11}	1	2::2	222	914	914	0. 97	\$47
Total	230	3. 99	8	352	117	1, 404	468	1. 54	917
Blowers and regulators	230	3. 241	1	193	193	626	626	0.84	746
	230	3. 77	ī	205	205	774	774	0.89	864
Total	230	3. 52	2	398	199	1, 400	700	1.73	809
Bottom builders	230	4. 89	2	328	164	1, 604	802	1.43	1, 123
Bottom builders' helpers	230	8.874	2 2	378	189	1, 465	733	1.64	891
Bottom builders' helper and grinder.	230	1. 80	1	235	235	423	423	1. 02	414
Brakemen, locomotive	230	1.55	3	77	26	119	40	0. 33	855
Charger and pushers' helper	230	2. 97	i	105	105	812	312	0.46	683

a The carnings here shown are for five months and probably for only a part of the employes. The statement for this establishment on page 155 is for all the employes for six months.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. J.—Steel Ingots: UNITED STATES—Continued.

ESTABLISHMENT No. 7-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for peri	od.	works	ition if nen had innous syment.
Occupation.	in the period.	rate nearest to average	Dif- ferent	Day	s of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	average earnings per em- ployé.
Cinder snappers	230 230 230	\$2.00 3.15 3.42	1 1 4	1 205 716	1 205 179	\$2 647 2,449	\$2 647 612	0.00 0.89 3.11	\$460 726 787
Total	230	3. 36	6	922	154	3, 098	516	4.00	773
Cinder snapper and cinder	230	1.83	1	65	65	119	119	0.28	421
wheeler. Cinder snapper and craneman. Cinder snapper and steel pourer Cinder tapper and ladle liner Cinder wheelers Cinder wheeler and fireman	230 230 230 230 230 230	2, 82 5, 40 3, 49 1, 55 1, 66§	1 1 3 1	22 20 121 69 6	22 20 121 23 6	62 108 422 107 10	62 108 422 36 10	0.10 0.09 0.53 0.30 0.23	1, 242 803 257 383
Cindermen	230 230 230	3. 59 3. 924 4. 12	1 2 1	90 239 172	90 120 172	323 938 709	323 469 709	0.39 1.04 0.75	825 903 948
Total	230	3, 93	4	501	125	1,970	493	2.18	904
Cinderman, furnace Cinderman and grinder	230 230	1.60 2.39	1	10 228	10 228	16 545	16 545	0.04	368 550
Cindermon and metal wheelers	230 230	3, 21 3, 79	2	269 184	125 184	863 697	432 697	1.17 0.80	738 871
Total	230	3. 44	3	453	151	1,560	520	1.97	792
Cinderman and scrap loader Coke stockers Coke stocker and vessel re-	230 230 230	2.91 3.104 1.85	1 2 1	135 349 169	135 175 169	393 1, 084 313	393 542 313	0.59 1.52 0.73	670 714 426
pairer. Coke wheelers Crane shifters and iron pourer. Craneman Cupola firemen. Cupola firemen's helpers. Doormen and laborers. Doorman and pusher. Doorman and vessel repairer. Engineers, grinding Engineers, groomotive. Foremen. Gasmakers' helpers Gasmakers' helpers and ladle	230 230 251 230 230 230 230 230 251 230	3. 21½ 2. 00 2. 57½ 1. 70 4. 21½ 2. 04½ 1. 95½ 1. 66½ 4. 81 2. 00 1. 80 1. 90 1. 90	1 1 2 2 2 1	370 245 153 132 378 399 46 43 8 40 468 404 568 404 395	185 123 153 132 189 200 23 43 8 46 234 135 189 220	1, 190 491 394 221 2, 437 1, 682 94 84 13 93 866 765 2, 733 872 854	595 246 394 221 1,219 841 13 93 433 255 911 436 218	1. 61 1. 07 0. 67 0. 57 1. 64 1. 73 0. 18 0. 19 0. 03 0. 20 2. 03 1. 76 2. 26 1. 91 1. 72	740 461 592 385 1, 483 970 513 449 374 465 426 436 1, 208 436 381 437
Gasmakers' helper and pit	230	1, 731	1	38	38	66	66		399
cleaner. Gesmakers' helper and stop-	230	1.82		74	. 74	135		0. 32	420
per setter. Gasmakers' belper and tongs-	230	2. 661		15	15	40	40	0. 07	613
Gressers	230	1.85	4	338	135	993	1	2.34	425
Grinders' helpers and ladle	230 230	1. 65	1	524	87	859 380		2. 28 0. 97	377 394
Grinders' helper and metal wheeler,	230	2. 36	1 .		160	426	426	0.78	t
Hooker and laborer	251	2.05¥			. 19	39		0.08	515
Inget leaders	230 230 230	4.50 5.01 5.25	1 1 4		14 166 184	63 832 3, 859	63 832 965	0.06 0.72 3.29	1, 035 1, 158 1, 20¢
Total	230	5. 194	6	915	153	4,754	792	3.98	1, 195

J.-Steel Ingots: UNITED STATES-Continued.

ESTABLISHMENT No. 7-Continued.

	Work-	Actual daily earn-ings, or daily	A	ctual co	ndition	ı for peri	od,	works	lition if nen had innous syment.
Occupation,	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ings.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	age.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Ingot loader and mould capper. Ingot loader and mould swinger.	230 230	\$4. 384 5. 24 j	1	186 140	186 140	\$816 734	. \$816 734	0. 31 0. 61	\$1,009 1,206
Iron melter and regulator	230 230	2. 761	1	148	148	409	409	0.64	636
Iron pourer and laborer	230	4. 01 3. 734	1	185 218	185 218	742 814	742 814	0. 80 0. 95	922 859
Iron stocker	230 230	1. 75 2. 00	1 1	107 113	107 113	187 225	187 223	0. 47 0. 49	402 458
Laborers	251 251 251 251 251	1. 40 1. 50 1. 55 1. 60	15 9 19 1	213 147 322 15	14 16 17 15	302 220 499 24	20 24 26 24	0, 85 0, 59 1, 28 0, 06	356 376 389 402
Total	251	1. 50	- 44	- 607	16	1, 045	24	2, 78	376
Laborer and metal breaker	251	1. 061	1	9	9	15	15	0.04	418
Laborers and metal wheelers	251 251	1. 50 3. 053	1	10 174	10 174	15 532	15 532	0. 04 0. 69	377 767
Total	251	2. 97	2	184	92	547	274	0.73	746
Laborers and mould cappers	251 251	1.954 2.43	1	23 72	23 72	45 175	45 175	0.09 0.29	491 610
Total	251	2.311	2	96	48	220	110	9. 38	581
Laborer and pit cleaner Laborer and pusher Laborer and regulator	251 251 251	1. 52 2. 00 1. 50	1 1 1	48 6 16	48 6 16	73 12 24	73 12 24	0. 19 0. 02 0. 06	382 502 377
Ladle cleaners	230 230	3. 20 3. 983	1	116 140	116 140	370 558	370 558	0. 50 0. 61	734 917
Total	230	3. 621	2	256	128	?28	464	1.11	834
Ladle liner Ladle liner and ladle packer Ladle liner and vesselman	230 280 230	4.52 3.02 6.07	1 1 1	188 138 168	188 138 168	850 417 1, 020	850 417 1, 020	0. 82 0. 60 0. 78	1, 040 69 5 1, 396
Ladle liner's helpers	230 230	3. 51) 3. 86	1	182 1 89	182 180	540 730	640 730	0. 79 0. 82	809 888
Total	230	3. 69}	2	371	186	1, 370	685	1.61	849
Ladle racker	230	1.70	1	180	189	321	321	0. 82	391
Limestone wheelers	230 230	1.40 1.65	1	19 172	19 172	26 284	26 284	0. 08 0. 75	315 380
Total	230	1. 62)	2	101	96	310	155	0. 83	373
Loam mixer	230 230	1. 65 5. 20 <u>1</u>	1 2	20 6 389	206 195	336 2, 023	836 1, 013	0. 90 1. 69	375 1, 197
Manganese heaters' helpers	230 230	2. 00 2. 82	1 2	3 391	3 196	6 1, 103	6 552	0. 01 1. 70	460 649
Total	230	2. 81	3	394	131	1, 109	370	1. 71	647
Mechanics	251 251 251	1. 70 1. 75 1. 85	1 1 1	187 216 189	187 216 189	318 378 351	318 378 351	0. 75 0. 86 0. 75	427 439 466
Total	251	1.77	3	592	197	1, 047	349	2. 36	

J.-Steel Ingots: UNITED STATES-Continued.

ESTABLISHMENT No. 7—Continued.

	Work-	Actual daily earn- ings,or daily	A	ctual co	ndition	for perio	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	s of done.	Earni	ngs.	Neces-	Conse- quent average	
		daily earn- ings.	em- ploy- és.	Total.	Aver- ago.	Total.	Aver-	em- ployés.	earnings per em- ployé.	
Metal stocker	230	\$2.50	1	6	6	\$15	\$15	0.03	\$575	
Metal stockers and scrap handlers.	230 230	2. 221 3. 195	1	93 124	93 124	207 396	207 396	0.40 0.54	512 735	
Total	230	2,78	2	217	100	603	302	0.94	639	
Metal washer	230	1.50	1	6	6	9	. 0	0.03	345	
Metal wheelers	230 230	3.46 3.84	9	1, 573 99	175 99	5, 439 380	380 604	6.84 0.43	795 883	
Total	230	3,48	10	1, 672	167	5, 819	582	7. 27	809	
Metal wheeler and puller-	230	2,15	1	33	33	71	71	0.14	493	
Metal wheelers and scrap stockers.	230 230 230	1.74 2.061 2.38	1 1 1	73 15 168	73 15 168	127 31 400	127 31 400	0.32 0.07 0.73	400 475 548	
Total	230	2.18	3	256	85	558	186	1. 12	501	
Mould capper Mould cappers and pushers Mould setters	230 230 230	3.74 3.46§ 5.31	1 2 4	101 274 742	191 137 186	714 950 3, 941	714 475 985	0.83 1.19 3.23	860 797 1, 222	
Mould swingers	230 230 230	5. 134 5. 37 5. 67	2 1 1	390 174 160	190 174 160	1, 951 934 907	97.0 93.4 90.7	1.65 9.76 0.70	1, 181 1, 235 1, 304	
Total	230	5.31	4	714	179	3, 792	948	3.11	1, 222	
Mould washers Pit cleaners Pitman and pushers' helper	230 230 220	1. 55 1. 35 3. 13	5 12 1	670 683 153	104 57 153	1, 036 1, 161 479	207 88 470	2. 91 2. 98 0. 67	356 254 720	
Pullers down	230 230	1.55 1.65	1 5	54 203	54 41	84 334	67 67	0. 23 0. 88	218 378	
Total	230	1.62	6	257	43	418	. 70	1.11	374	
Pushers	230 230 230	3.11 2.08 1.96		360 101 89		1, 120 210 175	560 210 175	1.57 0.44 0.39	716 478 432	
Regulators	230 230 230 230 230	1.55 1.64 1.70 1.91 3.04 1.30 4.89	2 2 2 1 2 1 1	293 261 171 101 200 296	147 131 86 101 103 220 128	455 478 290 192 676 747 810	214 145 192 214 192 214 747 F10	1. 27 1. 13 0. 74 0. 44 0. 36 0. 86	357 377 394 437 710 751 941	
Total	230	2.454	11	1, 430	132	3, 556	323	6. 30	564	
Regulator and tester	230 230	1. 68 . 90	1	30 223	30 223	375 18	377 18	0. 97 0. 0 9	387 207	
Serry stockers	20 20	1. 35 2. 064	3	9n 19	30 19	139 56	46 %	0. 39 0. 0ë	353 702	
Total	200	1. 80 j	•	109	27	197	49	4.47	416	
Surep eleckers and ecrappers	200 200	2. 51 2. 754		244 184	123 184	623 507	317 597	1. 06 0. 60	577 634	
2001	230	2.61	3	433	144	1, 133	377	1.58	CO 1	

J.—Steel Ingots: UNITED STATES—Concluded.

ESTABLISHMENT No. 7-Concluded.

	Work-	Actual daily earn- ings, or daily rate		ctual o	aditio	n for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	Dearest	Dir	Day:		Earni	ngs.	Neces.	Conse- quent	
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.	
Scrap wheelers	230	\$1.55	4	23	6	\$36	\$9	0.10	\$360	
Scrappera	230 230 230	3. 08 3. 56 3. 81	1 1 1	49 177 125	49 177 125	151 630 477	151 630 477	0. 21 0. 77 0. 54	709 819 878	
Total	230	8. 584	3	351	117	1, 258	419	1.52	824	
Steel pourers	230 230 230 230 230 230 230	6. 571 5. 05 5. 09 2. 091 1. 55 1. 65	2 2 2 1 4 8	370 369 368 288 511 587	185 185 184 288 128 196	2, 482 1, 803 1, 874 604 797 970	1, 216 932 937 604 199 323	1.61 1.60 1.60 1.25 2.22 2.55	1, 512 1, 161 1, 171 482 359 380	
Vesselmen	230 230 230	4. 28 5. 91 6. 67	2 1 1	366 79 212	183 79 212	1, 549 467 1, 414	775 467 1, 414	1. 59 0. 84 0. 92	978 1, 360 1, 534	
Total	230	5. 22	4	657	164	3, 430	858	2. 85	1, 201	
Watchmen	202 230 230 230	1. 55 . 60 2. 25 2. 65	2 6 2 8	364 761 413 390	182 127 207 130	564 466 929 1, 031	292 78 465 344	1. 25 8. 31 1. 80 1. 70	432 141 517 608	
Weighmen	230 230	1.40 2.00	2 4	349 781	175 195	497 1, 558	249 390	1.52 8.40	828 459	
Total	230	1. 82	6	1, 180	188	2, 055	843	4. 92	418	
The establishment		8. 02}	295	32, 101	109	6 97, 080	329	138. 42	701	

K .- Steel Ingots: CONTINENT OF EUROPE.

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table V.]

BlacksmithBlacksmith's helper	77 77	\$0. 67à	1	69 67	69 67	\$46 23	\$46 23	0. 90 0. 87	\$51 26
Blowers	77 77 77	. 811 1. 12 1. 231	2 3 1	131 208 70	66 69 70	107 233 86	54 78 86	1. 70 2. 70 0. 91	63 86 93
Total	77	1.04	6	409	68	426	71	5. 31	80
Coke carriers	77 77	. 62 . 44	2 1	119	60 70	74 81	37 31	1. 55 0. 91	48 81
Crucible men	77 77	. 64 } 1. 26	2	1 3 0 73	65 73	84 92	42 92	1. 69 0. 95	50 97
Total	77	. 861	3	203	68	176	59	2.64	67
Doormen	77	. 673 . 77	3	220 82	73 82	149 64	50 64	2. 86 1. 06	53 60
Total	77	. 70}	4	302	76	213	53 1	3. 92	54

a The carnings here shown are for nine and one-half months only. The statement for this establishment on page 155 is for one year.

TARIS EST. -ACTUAL AND TERDRETICAL TIME AND RARKINGS-Communic

A. - Secol Augus: DUCKER: OF KURDES -- Continued.

DETAILISENEYS No - - Commence

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K .- Steel Ingots: CONTINENT OF EUROPE - Continued.

ESTABLISHMENT No. - - Concluded.

	Work-	Actual daily earn- ings.or daily	A	ctual co	ndition	for perio	od.	works	ition if sen had nuous yment.
Occupation.	days in the period.	rate nearest to average	Dif-	Days work	of lone.	Earni	ngs.	Neces-	Conse- quent
`		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	eary em- ployés.	earnings per em- ployé.
Foremen	31	3L 56)	2	62	31	\$97	\$10	2.00	\$19
Grinders	27 27	. 621 . 721	3	89 65	13 22	24 47	8 16	1.44 2.41	17 20
Total	27	. 68}	6	104	17	71	12	3. 85	18
Heaters	27 27 27 27 27	.77 .791 .661	11 1 2	26 209 3 51	13 19 3 26	20 165 2 45	10 15 2 23	0.96 7.70 0.11 1.89	21 21 18 24
Laborets	27 27 27 27 27	. 624 . 664 . 674 . 724 . 96	21 10 5 3	215 386 113 81 23	10 19 23 27 23	135 124 76 53 22	12 15 19 22	7. 96 6. 89 4. 19 3. 00 0. 85	17 18 18 19 26
Total	27	. 67	40	618	15	413	10	22. 89	18
Laborers, converter Ladle cleaners Ladle stoppers	27 27 27	. 69 . 69 . 89	6 4 2	121 91 48	20 23 24	84 63 43	14 16 22	4. 48 2. 37 1. 78	19 19 24
Ladlemen	27 27	.79 1.00}	2 2	47 48	24 24	36 46	18 23	1.74 1.78	21 26
Total	27	. 861	4	95	21	82	21	8. 52	23
Liners, converter	27 27 27 27 27	.50 .624 .724	2 27 1 3	870 20 78	2 14 20 26	2 235 14 66	1 9 14 22	0. 15 13. 70 0. 74 2. 89	14 17 19 23
Total	27	. 67	83	472	14	317	10	17.48	18
Lining preparers	27	. 62}	2	59	30	37	19	2.19	17
Masons	27 27	.77 .964	1 2	20 46	20 23	15 44	15 22	0.74 1.70	20 26
Total	27	. 691	8	66	22	59	20	2.44	24
Masons' helpers Mould setters and steel pourers Overseers Pit cleaner Regulators	27 27 27 31 27 27 27	. 391 . 751 . 831 . 961 . 621	4	81 149 48 65 80 64	20 17 24 33 80 16	32 111 40 63 19 40	8 12 20 32 19	3.00 5.53 1.78 2.10 1.11 2.37	11 20 23 30 17
Steel pourers' helpers	27 27	. 83 . 91 . 78	9 5 6	174 98 107	19 20 18	143 89 84	16 18 14	6. 44 3. 63 3. 96	22 23 21
Stopper setters	27 27	. 29 . 34	2	90 39	23 20	26 13	7 7	3, 33 1, 44	8
Total	27	. 30	6	129	22	39	7	4.77	8
Stoppermakers	27 27	. 62½ . 75	1	16 8	16 8	10 6	10 6	0. 59 0. 30	17 20
Total	27	. 661	2	24	12	16	8	0. 89	18
Weighman	27	. 67	1	29	29	19	19	1. 07	18
The establishment		.74	186	3, 316	18	2, 452	13	122. 18	20

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. K.—Steel Ingets: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table V.]

	Work-	waity	A	ctual of	ndition	for peri	od	works	ition if nen had inuous yment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day	s of done.	Earni	oga.	Neces-	Conse-
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Blacksmiths Blacksmiths' helpers Blowers	78 78 78	\$0.62 .48 .635	2 5	150 322 112	75 64 56	\$90 155 71	\$47 31 36	1.92 4.13 1.44	\$4.6 35 45
Casting carriers Chargers Chippers	78 78	.47 .68 .43)	3	166 515 94	55 58 47	79 352 41	26 39 21	2 13 6 63 1.21	37 53 34
Cindermen	78 78	. 509 . 73	17	819 183	48 62	489 135	29 45	10.50 2.37	47 57
Total	78	.62	20	1,004	50	624	31	12.87	45
Cinderman and ladle cleaner Coke stockers Craneman Elovator tenders	78 78 78 78	.64 .574 .88 .40	1 9 1	568 67 213	80 63	44 325 59 85	44 36 59 21	0.85 7.28 0.86 2.71	50 45 69 31
Engineers, blowing	78 78	1,290		186 90	93 90	148 116	74 116	2.38 1.15	62 101
Total	78	. 954	3	276	92	364	88	A 53	75
Foremen, laborers	18	.73	3	130	43	95	32	1.67	57
Greasers	78 78	.524	6	417	70 16	218	26 13	5. 35 0. 21	
Total	78	. 534	7	4.12	62	231	33	5. 56	42
Hydraulie men	78 78 78 78	.51 .72 .50	3 2 6	271 199 36 247	68 63 15 41	- 138 136 18 117	25 45 9 20	2 47 2 42 0 46 3 17	40 56 29 37
Iron stockers	78 78	:51	25	1.372	55 45	788 63	11	17.59 1.15	43 56
Total	78	,384	7.	1, 462	54	853	32	14.74	46
Koopers	78 78	-74	3 3	344 358	89 75	236 354	31 73	4 44	58 73
Teal	73	. \$15	10	734	<u></u>	(3)	52	2.41	
Keepers' apprentice	75 75	 	1	14 29	::	.4 14	4	0. 18 0. 37	; ; 22
Laborers		. 454 374 1. 144	3	1, 149 3,7 16	29 W 16	521 339 15	:3 24 :5	14. 62 6. NS 8. 21	45
Total	:3	. 34		:. šw	43	646	=	2L 71	233
Ladie skaners	75	. 63	٠,	247	c	161	47	1.17	51
Ledlemen	75 78 78	. 21 è . 64 . 85 è	\$ 3	52) 2	3 1 3	18° 128 280	15 46 71	L 10 1.76 L 20	50
THA	-22		13	34			41	13. 95	
mint	: :>	د: ولد.	:	نذه	41 13	**	**	1. PA 1. SE	. 39

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. K.—Steel Ingots: CONTINENT OF EUROPE—Concluded.

ESTABLISHMENT No. -. -Concluded.

	Work-	Actual daily earn- inga, or daily rate		Actual oc	nditio	o for peri	od.	Condition if workmen had . continuous employment.		
Occupation.	days in the period.	nearest to average	Dif-			Earn	ngs.	Noces-	Conse- quent	
<u>.</u>		daily earn- ings.	em. ploy- és.	Total.	Aver-	Total	Aver-	eary em- ployés.	average earnings per em- ployé.	
Melters	78 78 78 78	\$0.631 .784 1.12 1.68	8 12 1	390 830 83 83	49 69 83 83	\$248 652 93 139	\$31 54 93 139	5, 00 10, 64 1, 06 1, 06	\$50 61 87 131	
Total	78	. 81	22	1, 386	63	1, 132	51	17.76	64	
Overseers	78	1. 45	2	171	86	249	125	2.19	1114	
Pitmen	78 78 78	. 63 . 79 . 991	30 1 2	1, 692 72 158	56 72 79	1, 070 56 157	36 56 79	21. 69 -0. 92 2. 03	4 9 61 78	
Total	78	.67	23	1, 922	58	1, 283	39	24. 64	-52	
Runners	78 78	1.05 1.24	3	231 64	77 64	243 80	81 80	2.96 0.82	83 98	
Total	78	1.00	4	295	74	323	81	8. 78	85	
Runners' helpers	78	. 90	3	190	63	171	57	24	70	
Steel pourers	78 78	.41 .56	2 2	148 119	74 60	61 67	31 34	1.90 1.53	32 44	
Total	78	. 48	4	267	67	128	32	3. 43	37	
Superintendents	78 78	2.11 2.65	1	89 90	89 90	188 239	188 239	1. 14 1. 15	163 207	
Total	78	2. 38	2	179	90	427	214	2. 29	186	
Weighmen	78	. 57	2	143	72	82	41	1. 88	45	
The establishment		. 67	256	14, 683	57	9, 839	38	188.23	52	

L.—Steel Billets: UNITED STATES.

ESTABLISHMENT No. —.

[No statement of cost of production for steel billots is shown in Part I.]

Blacksmiths' helpers	202	\$1.50	2	187	94	\$283	\$142	0. 93	\$306
Boilermakers' helpers	202 202	1. 62 1. 75	1	173 1 9 9	173 199	281 838	281 338	0. 86 0. 99	328 343
Total	203	1. 66)	2	872	186	619	310	1.85	336
Carboneers	202	2. 28	2	259	130	590	295	1.28	400
Carpenters	202 202 202	1. 25 1. 50 2. 20	1	28 14 187	28 14 187	25 21 412	35 21 412	0.14 0.07 0.93	253 303 445
	202	2.45	i	191	191	467	467	0. 95	494
Total	202	2. 22)	4	420	105	935	234	2, 09	450
Chargers	203 202 202 202 202	1. 75 1. 83 2. 00 2. 201 2. 57	10 17 18 2	12 35 229 889 119	3 4 13 49 60	21 64 458 1, 962 306	5 6 27 109 158	0. 06 0. 17 1. 13 4. 40 0. 59	354 365 414 446 511
Total	203	2.19	51	1, 264	25	2,811	55	6. 25	44

La-Steel Billets: UNITED STATES-Continued.

ESTABLISHWENT No. - - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual or	adition	for peri	od.	works	ition if nen had innous of ment.
Occupation.	days in the period.	rate pearest	Dif- ferent	Day	s of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Aver-	Total.	Aver-	em- ployés.	earmings per em- ployé.
Charger and chipper. Charger and furnace helper. Charger and guide. Charger and heaters' belpers. Charger and heaters' belpers. Charger and laborer. Chargers and sweepers. Chargers and tongamen. Charger and transmitter.	202 202 202 202 202 202 202 202 202 202	\$1. 78 2.50 2.00 2.13 2.70 1.56 1.65 2.10 2.11	111411111111	13 2 4 364 126 32 6 47 120	13 2 4 91 126 82 3 24 120	523 5 8 778 341 56 10 99 253	\$23 5 8 125 341 50 5 50 253	0, 06 0, 01 0, 02 1, 80 0, 62 0, 16 0, 03 0, 23 0, 59	\$357 502 404 432 547 316 237 425 426
Chippers	202 202 202 202 202	1.25 1.60 2.00 2.50	1 2 3 1	12 37 292 4	12 19 97	16 59 584 10	16 30 195 10	0.08 0.18 1.45 0.02	266 321 404 505
Total	202	1.94	7	345	49	669	96	1.71	890
Chipper and masons' helper Cleaner, office Conductors Conductor and fireman Conductor and oiler Conductor and transmitter	202 202 202 202 202 202 202	1.85 1.00 1.50 1.734 1.394 1.574	1 9 1 1 1	158 30 600 15 33 146	158 30 67 15 33 146	292 30 991 26 46 230	292 30 100 26 46 230	0.78 0.15 2.97 0.07 0.16 0.72	377 200 300 354 283 318
Cradlemen	202 202	1.92 2.50	1	124	124	238 10	238 10	0. 61 0. 02	388 505
Total	202	1.934	2	128	64	248	124	0.63	391
Cradlemen and tablemen	202 203	1.49± 1.78	1	71 131	71 131	106 233	106 233	0.35 0.65	362 356
Total	292	1.68	2	202	101	339	170	1.00	339
Cradleman and transmitter Crane boy Cranemen	202 202 202	2.00 1.00 1.74	1 1 3	118 2 327	118 2 109	236 2 570	238 2 190	0.58 0.01 1.62	404 203 352
Cutters	202 202 202 202 202 202	2.50 2.75 2.04 3.161 3.631	1 1 1 2 1	2 131 118 361 115	2 131 118 120 115	5 360 347 1,142 418	5 360 347 381 418	6. 01 0. 65 0. 58 1. 79 0. 57	503 553 594 639 734
Total	202	3, 125	7	727	104	2, 273	325	\$. 60	631
Door boys	202 202	.75 .88	23 1	1, 342 108	58 108	1, 015 95	44 95	6, 64 0, 53	153 178
Total	202	.76	24	1, 450	60	1, 110	46	7.17	155
Door boy and table boy Door boy and transmitter	202 202	.90 1.26	1	111 120	111	100 152	100 152	0.55 0.59	182 256
Dropmen	202 202	1. 35 1. 60	1	8 13	13	11 21	11 21	0.04	278 326
Total	202	1. 52	- 2	21	11	32	16	0.10	308
Engineera'	202 202 202 202 202 202	1.70 1.75 1.80 1.96± 2.00	1 3 1 2	37 74 27 145 6	37 25 27 73 6	129 48 285 12	62 43 48 143 12	0. 18 0. 37 0. 13 0. 72 0. 03	338 352 359 397 404
T	202	1.851	8	289	36	536	67	1.43	375

L.-Steel Billets: UNITED STATES-Continued.

ESTABLISHMENT No. — —Continued.
[No statement of cost of production for steel billets is shown in Part I.]

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	d.	workn	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearout to average	Dif. ferent	Days work		Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Engineers, locomotive	202	\$2.15	16	1,-841	115	\$ 3, 935	\$246	9. 11	\$433
Firemen	202 202 202	1. 50 2. 00 2. 10	2 5	51 873	27 175	6 108 1, 806	3 54 361	0. 02 0. 27 4. 33	303 404 417
Total	202	2.06	9	933	104	1, 920	213	, 4.62	416
Foreman, chippers	202 202	3. 89 3. 81	1	187 182	187 182	727 603	727 69 3	_0.93	785 769
Foremen, mill	20 2 203	5. 10 5. 35 <u>1</u>	1	196 196	196 196	998 1, 050	998 1, 050	0. 97 0. 97	1, 029 1, 083
Total	202	5. 224	: 1	892	196	2, 048	1, 024	1.96	1, 055
Forgers	202 202	2. 00 2. 25	2 2	3 4	2 2	9	3 5	0. 01 0. 02	404 455
Guides	202 202 202	1. 62 1. 83 1. 951	4 3 2	21 28 47	5 9 24	34 51 92	9 17 45	0. 10 0. 14 0. 23	827 368 395
Total	202	1.843	9	96	11	177	20	0.47	872
Guides and tongsmen Guide and transmitter Hammer drivers	202 202 202	2. 03 2. 04 2. 63	2 1 4	23 115 253	17 115 63	67 235 667	235 167	0, 16 0, 57 1, 25	410 413 533
Heaters	202 202	2. 74 2. 98	3 16	261 1, 270	87 127	715 3, 784	238 878	1. 29 6. 29	553 602
Total	202	2. 94	13	1, 531	118	4, 490	846	7. 58	594
Heaters' holpers	202 202	2. 011 2. 15	14 6	1, 372 551	98 92	2, 764 1, 188	197 198	6, 79 2, 73	407 436
Total	202	2.05	20	1, 923	96	8, 952	198	9. 52	415
Heaters' helper and hooker Heaters' helper and lighter-up. Heaters' helper and tongsman.		2. 474 1. 871 2. 28	1 1 1	99 57 85	99 57 85	245 107 194	245 107 194	0, 49 0, 28 0, 42	500 379 461
Heaters' belpers and trans- mitters.	202 202	2.00 2.17	1	120	2 120	261	261	0. 01 0. 59	404 439
Total	202	2.17	2	122	61	265	133	0. 69	439
Hookers	202 202 202	2.31 2.42 3.05	3 4	130 254 357	43 64 89	300 615 1, 088	100 154 272	0.64 1.26 1.77	466 489 616
Total	202	2. 70	11	741	67	2, 003	182	8. 67	546
Hookers, tumble Hooker and screwman	202 202	3. 463 2. 27		430 69	86 69	1, 491 157	298 157	2.18 0.34	700 460
Hookers and tongsmen	202 202	2. 36 2. 69	1	108 92	108 92	255 248	258 248	0. 53 0. 46	477 545
Total	202	2. 51	-	200	100	508	252	0. 99	508
Inspectors	202 202	2. 10 2. 70	1	11 7	11 7	23 19	23 19	0.05 0.03	422 548
Total	202	2. 83	2	18	9	42	21	0.08	471

L .- Steel Billets: UNITED STATES-Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	odition	for peri	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to	Dif- ferent	Day	of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	average earnings per em- ployé.
Charger and chipper	202 202 202	\$1. 78 2. 50 2. 00 2. 13; 2. 70; 1. 56; 1. 66; 2. 10; 2. 11	1 1 4 1 1 2 2 1	13 2 4 364 126 32 6 47 120	13 2 4 01 126 32 3 24 120	\$23 5 8 778 341 50 10 99 253	\$23 5 8 195 341 50 5 50 253	0, 06 0, 01 0, 02 1, 80 0, 62 0, 16 0, 03 0, 23 0, 59	\$35° 50° 40° 43° 51° 31° 33° 42° 42°
Chippers	202 202 202 202	1, 25 1, 60 2, 00 2, 50	1 2 3 1	12 37 292 4	12 19 97 4	16 59 584 10	16 30 195 10	0.06 0.18 1.45 0.02	265 321 404 505
Total	202	1.94	7	345	49	669	96	1.71	392
Chipper and masons' helper Cleaner, office Conductors Conductor and fireman Conductor and oiler Conductor and transmitter	202 202 202 202 202 202 202	1.85 1.00 1.50 1.731 1.391 1.571	1 9 1 1 1	158 30 600 15 33 146	158 30 67 15 33 146	292 30 901 26 46 230	292 30 100 26 46 230	0. 78 0. 15 2. 97 0. 07 0. 16 0. 72	373 200 300 350 280 318
Cradlemen	202 202	1.92 2.50	1	124	124	238 10	238 10	0. 61 0. 02	388 508
Total	202	1.93	2	128	64	248	124	0. 63	391
Cradlemen and tablemen	202 203	1.49± 1.78	1	71 131	71 131	106 233	106 233	0. 35 0. 65	301 350
Total	202	1.68	2	202	101	339	170	1.00	331
Cradleman and transmitter Crane boy Cranemen	202 202 202	2.00 1.00 1.74	1 1 3	118 2 327	118 2 109	236 2 570	236 2 190	0.58 0.01 1.62	404 203 353
Cutters	202 202 202 202 202 202	2. 50 2. 75 2. 94 3. 161 3. 63	1 1 3 1	131 118 361 115	131 118 120 115	5 360 347 1,142 418	5 360 347 381 418	0. 01 0. 65 0. 58 1. 79 0. 57	503 553 594 631 734
Total	202	3, 12	7	727	104	2, 272	325	\$, 60	631
Door boys	202 202	.75	23 1	1, 342 108	58 108	1, 015 95	44 95	6. 64 0. 53	153 178
Total	202	.70	24	1, 450	60	1, 110	46	7.17	153
Door boy and table boy Door boy and transmitter	202 202	. 90 1. 26	1	111 120	111 120	100 152	100 152	0. 55 0. 59	185 256
Dropmen	202 202	1. 35 1. 60	1	8 13	8 13	11 21	11 21	0.04	278 326
Total	202	1. 52}	2	21	11	32	16	0.10	308
Engineers',	202 202 202 202 202 202	1.70 1.75 1.80 1.961 2.00	1 3 1 2	37 74 27 145 6	37 25 27 73 6	62 129 48 285 12	62 43 48 143 12	0. 18 0. 37 0. 13 0. 72 0. 03	333 352 356 297 404
Total		1.85	-		36	536	67	1.43	_

L .- Steel Billets: UNITED STATES-Continued.

ESTABLISHMENT No. - Continued.

[No statement of cost of production for steel billets is shown in Part I.]

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for period	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif.	Day work		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	em- ployés.	average earnings per em- ployé.
Engineers, locomotive	202	\$2, 15	16	1,-841	115	83, 935	\$246	9. 11	\$435
Firemen	202 202 202	1.50 2.00 2.10	2 2 5	51 875	27 175	108 1,806	3 54 361	0. 02 0. 27 4. 33	303 404 417
Total	202	2,06	9	933	104	1, 920	213	. 4.62	416
Foreman, chippers Foreman, laborers	202 202	3. 89 3. 81	1	187 182	187 182	727 693	727 693	0.93	788 769
Foremen, mill	202 202	5, 10 5, 33§	1	196 106	196 196	998 1, 050	998 1, 050	0.97 0.07	1, 029
Total	202	5. 224	2	392	196	2,048	1,024	1.94	1,055
ForgersFurnace helpers	202 262	2.00 2.25	2 2	3 4	2 2	6 9	3 5	0. 01 0. 02	404 458
Guides	202 202 202	1. 62 1. 82 1. 95½	4 3 2	21 28 47	5 9 24	34 51 92	9 17 46	0. 10 0. 14 0. 23	327 368 395
Total	202	1. 845	9	96	11	177	20	0.47	375
Guides and tongsmen	202 202 202	2. 03 2. 04 2. 63	2 1 4	33 115 253	17 115 63	67 235 667	34 235 167	0.16 0.57 1.25	410 413 533
Heaters	202 202	2.74 2.98	3 16	261 1, 270	87 127	715 3, 784	238 378	1. 29 6. 29	558 603
Total	202	2.94	13	1, 531	118	4, 490	346	7.58	594
Heaters' helpers	202 202	2. 011 2. 15	14 6	1, 372 551	98 92	2,764 1,188	197 198	6.79 2.73	407
Total	202	2, 054	20	1, 923	96	3, 952	198	9.52	415
Heaters' helper and hooker Heaters' helper and lighter-up. Heaters' helper and tongsman.	202 202 202	2. 474 1. 871 2. 28	1 1 1	99 57 85	99 57 85	245 107 194	215 107 194	0.49 0.28 0.42	500 379 461
Heaters' belpers and trans- mitters.	202 202	2.00 2.17	1	2 120	120	261	261	0.01 0.59	404 439
Total	202	2.17	2	122	61	265	133	0.60	439
Hookers	202 202 202	2.31 2.42 3.05	3 4 4	130 254 357	43 64 89	300 615 1, 088	100 154 272	0. 64 1. 26 1. 77	466 489 616
Total	202	2. 701	11	741	67	2, 003	182	3.67	546
Hookers, tumble	202 202	3. 461 2. 271		430 69	86 69	1, 491 157	298 157	2.13 0.34	700
Hookers and tongsmen	202 202	2.36 2.60½	1	108 92	108 92	255 248	255 248	0.53 0.46	477 545
Total	202	2.51	2	200	100	503	252	0.99	508
Inspectors	202 202	2. 10 2. 70	1	11 7	11 7	23 19	23 19	0.05	422 548
Total	202	2.331		18	9	42	21	0.08	471



L.-Steel Billets: UNITED STATES-Continued.

ESTABLISHMENT No. — - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for period	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work	of lone.	Earni	ngs.	Neces	Conse- quent	
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total	Aver- age.	em- ployés.	earnings per em- ployé.	
Inspector and stamper Inspector and weighman Janitor Laborers	202 202 235 202	\$1.964 1.934 .49 1.25	1 1 1 44	54 142 244 2,742	54 142 244 62	\$106 275 1202 3,444	\$106 275 120 78	0. 27 0. 70 1. 04 13. 57	\$297 391 116 254	
Levermen	202 202	2.21 2.51	3 2	323 140	108 70	714 352	238 176	1.60 0.69	447 508	
Total	202	2.30	5	463	93	1,066	213	2, 29	465	
Lighter-up	202	1.00	1	92	92	92	92	0.48	202	
Machinists	202 202 202	2.00 2.25 2.50	1 1 1	200 205 224	200 205 224	400 461 559	400 461 559	0. 99 1. 01 1. 11	404 454 504	
Total	202	2. 26	3	629	210	1, 420	473	3, 11	456	
Mail boys	202	. 43	2	217	109	93	47	1.07	87	
Masons	202 202	3. 25 4. 00	3	228 190	76 190	739 759	246 759	1. 13 0. 94	658 807	
Total	202	3, 581	4	418	105	1, 498	375	2.07	724	
Masons' helpers	202	1, 50	10	328	33	492	49	1, 62	302	
Otlers	202 202	1. 35 1. 50	1	158 172	158 172	213 257	213 257	0. 78 0. 85	275 305	
Total	202	1. 424	2	330	165	470	235	1.63	288	
Painter	202	2. 334	1	3	3	7	7	0.01	471	
Pipe fitters	202 202	1.50 2.37	2	307 213	154 213	461 506	231 506	1.52 1.05	300 480	
Total	202	1.86	3	520	173	967	322	2. 57	370	
Riggers Screwmen Stampers Storekeeper Storekeeper's helper Sweepers	202 202 203 202 202 202 202	1.50 2.45 2.39 1.80 1.40 1.46	2 5 3 1 1 6	193 1, 110 356 105 73 134	97 222 119 105 73 22	290 2, 746 850 190 102 196	145 549 283 190 102 33	0. 96 5. 50 1. 76 0. 52 0. 36 0. 66	304 500 483 300 283 294	
Table boys	202 202	1.25 1.42	1 3	38 176	38 59	47 250	47 83	0. 19 0. 87	256 287	
Total	202	1, 39	4	214	54	297	74	1.06	280	
Tablemen	202 202	1. 95 1. 83	3	146 58	49 88	285 161	95 161	0.72 0.44	394 370	
Tongamen	202 202	2.321 2.51	6 2	381 31	64 16	885 78	148 39	1. 89 0. 15	460 500	
Total	202	2. 334	8	412	52	963	120	2.04	673	
Tongsmen and transmitters Transferman	202 202	2, 25 t 1, 65	2	160 23	80 23	361 37	181 37	0.79 0.11	456 325	
Transmitters, car	202 202 202 202 202	1. 75 2. 13 2. 225 2. 425	1 4 3 1	23 129 339 31	23 32 113 31	39 275 755 75	39 69 252 73	0.11 0.64 1.68 0.15	343 431 454 486	



L.-Steel Billets: UNITED STATES-Concluded.

ESTABLISHMENT No. - Concluded.

	Work-	GENIA	Δ	Condition if workmen had continuous employment.					
Occupation.	days in the period.	Dearest	to Dif-		of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- éa.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per om- ployé.
Transmitters, hook	203 203 203	\$2,381 2,574 3,50	4 1 1	221 110	55 110 4	\$527 284 14	\$132 284 14	1.00 0.54 0.02	\$48 2 522 707
Total	202	2. 40	6	235	56	825	138	1. 63	497
Transmitters, hydraulic	202	1.98	2	148	74	286	143	0. 73	390
Watchmen	235 235	1.46 2.95	4	846 206	212 206	1, 23 5 608	906 309	8. 60 0. 88	843 694
Total	235	1. 75	5	1, 052	210	1, 843	369	4.48	413
Water carrier	202 202 202 202	1. 35 1. 50 2. 30 1. 80	1 2 1 2	180 225 201 83	130 113 201 42	177 888 456 149	177 160 456 75	0. 64 1. 11 1. 00 0. 41	275 303 458 363
The establishment		2.06	399	29, 264	73	60, 284	151	143.87	419

M.-Steel Blooms: UNITED STATES.

ESTABLISHMENT No.-

[No statement of cost of production for steel blooms is shown in Part I.]

· · · · · · · · · · · · · · · · · · ·		·							
Ashmen	132 132 132	\$1.50 1.60 1.75	1 3 3	14 156 268	14 52 89	\$21 255 456	\$21 85 152	0. 11 1. 18 2. 03	\$198 216 225
Total	132	1.67	7	438	63	782	105	3. 32	251
Brakemen	132 132	1. 60 1. 85	8	210 119	70 119	341 220	114 220	1. 50 0. 90	214 244
Total	132	1.70	4	820	82	561	140	2.49	225
Brakeman, locomotive	132	1.65	1	123	123	203	202	0.93	217
Carponters	144 144	2. 00 2. 15	2 1	22 78	11 78	45 167	23 167	0. 15 0. 54	295 308
Total	144	2. 12	3	100	33	212	71	0. 69	305
Chargers and drawers	132 132 133 132	2. 62) 2. 77) 8. 00 3. 25	5 6 1 1	139 634 17 4	28 106 17 4	865 L 759 51 13	78 293 51 13	1. 05 4. 80 0. 13 0. 03	347 366 396 429
Total	132	2. 75}	13	794	61	2, 188	168	6. 01	364
Charger and scrap wheeler Cinder wheeler Coal dumper	132 132 144	2. 56 <u>1</u> 1. 60 1. 50	1 1 1	23 120 166	23 120 166	59 191 254	59 191 254	0.17 6.91 1.15	339 210 220
Crane boys	132 132 132	1. 00 1. 834 2. 00	1 1 2	1 96 113	96 57	1 176 226	1 176 113	0. 01 0. 73 0. 86	133 242 264
Total	132	1. 92	4	210	53	403	101	1.60	253
Craue boy and door boy	132 132	1, 131 .85	1 7	75 363	75 83	85 823	85 47	0. 57 2. 92	150 113

TABLE WIL.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. M.—Steel Blooms: United STATES—Continued.

ESTABLISHMENT No. -, -Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ndition	for perio	od.	work	ition if men had inpous of ment.
Occupation.	days in the period.	rate quarest to average	Dif-	Day work		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Aver- age.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Door boy and laborer	144 132 132	\$1.00 3.00 3.20	1 1	7 93 128	7 93 128	87 279 410	87 279 410	0, 0.5 0, 70 0, 97	\$14 i 354 423
Engineers, locomotive	132 132	1.00 1.85	1 2	93 262	93 131	152 484	152 242	0, 70 1, 98	216 244
Total	132	1.79	3	335	118	636	212	2.68	236
Fireman Foreman, laborers Foreman, sculi breakers Grossers	132 144 144 132	1. 85 1. 85 2. 25 1. 80	1 1 1 2	114 146 143 303	114 148 143 152	210 209 322 552	210 269 322 276	0. \$6 1. 01 0. 99 2. 30	243 265 324 246
Heaters	132 132	4. 12) 5. 23	1 4	434	8 109	2, 273	23 568	0.06 3.29	545
Total	132	5. 211	5	442	88	2, 305	461	3, 35	688
Heaters' helpers	132 132	3.14 3.37	2 3	101 308	51 103	317 1,038	159 346	0. 77 2. 33	414
Total	132	3. 314	5	409	82	1, 355	271	3.10	437
Laborers	144 144 144 144 144 144 144	1.40 1.50 1.53 1.60 1.63 1.70 1.75	30 7 1 12 5 2	1, 240 666 139 751 582 212 233	41 95 109 63 116 196 78	1, 747 996 214 1, 200 960 356 409	58 142 214 100 192 178 136	9, 61 4, 63 0, 97 5, 22 4, 04 1, 47 1, 62	203 215 223 236 238 243 253
Total	144	1.54	60	3, 823	64	5, 882	98	26. 56	221
Laborers, railroad Laborer and scrap wheeler	144 144	1. 40 1. 684	7	597 51	85 51	835 86	119 86	4. 15 0. 35	201 243
Machinişta	146 144 144 144 144	1. 82½ 2. 10 2. 50 2. 73 3. 20	1 1 1 1	181 201 2 179 116	161 201 2 179 116	294 422 5 423 370	294 422 5 493 370	1. 12 1. 40 0. 01 1. 24 0. 81	263 302 360 397 439
Total	144	2.40	5	659	132	1, 584	317	4. 58	344
Machinists' helpers	144 144	1.75 1.90	1	119 168	119 168	207 320	207 320	0. 83 1. 17	250 274
Total	141	1. 83	2	287	144	527	264	2.00	264
Mixers and mixers' helpers	172 152 132	1.505 1.845 1.905	1 1 3	133 130 407	133 130 136	212 210 770	212 210 259	1. 01 0. 98 3. 0s	210 244 252
Total	132	1.83	5	670	134	1, 228	246	5. 07	243
Plumber	144 144 132 132 132	2.00 1.50 2.94 3.974 5.18	1 6 1 2	147 167 536 127 200	147 167 89 127 100	294 232 1, 575 505 1, 036	204 252 263 505 518	1. 02 1. 16 4. 06 0. 96 1. 52	288 217 888 525 684
Serap wheelers	192 102 102 102 102	1.50 2.20 2.50 3.00	1 1 1	100	55 2 2	240 5 6	120 5 6	0. 03 0. 83 0. 03 0. 02	198 291 330 396

Table XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. M.—Steel Blooms: UNITED STATES—Continued.

ESTABLISHMENT No .- - Concluded.

	Work-	Actual daily earn- lngs, or daily		etual eq	ndition	for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Dif-	Days of work done.		Earnings.		Neces-	Conse- quent	
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	average earnings per em- ployé.	
Scrap wheelers and shearmen's helpers.	132 132	\$2.30± 2.57	1	101	104	\$219 18	\$249 18	0.79 0.05	\$316 339	
Total	132	2.40}	2	111	56	267	134	0.84	318	
Scull breakers	144 132	1.50 3.891	5 2	551 217	110 109	828 845	166 423	3. 83 1. 64	216 514	
Shearmen's helpers	132 132	2. 624 2. 71	8	610 223	76 74	1,600 604	200 201	4. 62 1. 69	346 358	
Total	132	2.64	11	833	76	2, 204	200	6.31	349	
Steel loaders	132 132 132	1.90 2.09 2.40	11 1 3	747 123 328	68 123 109	1, 417 257 786	129 257 262	5. 66 0, 93 2, 48	250 276 316	
The establishment		2, 12	195	15, 194	78	32, 226	165	110.79	291	

ESTABLISHMENT No. --

[No statement of cost of production for steel blooms is shown in Part I.]

Ashman	230 251	\$1.60 2.11	1 2	10 429	10 215	\$16 905	\$16 453	0.04 1.71	\$368 589
Blacksmiths	230 230 230 230	2. 30½ 2. 50 2. 90 3. 15	1 2 1 1	215 9 209 221	215 5 209 221	496 23 608 696	496 12 608 696	0. 98 0. 04 0. 91 0. 96	531 588 669 724
Total	230	2. 781	5	654	131	1, 823	365	2.84	641
Blacksmiths' helpers	230	1. 85	4	574	144	1,062	266	2, 50	426
Brakemen	230 230	1. 55 1. 60	7 3	421 352	60 117	652 563	93 188	1. 83 1. 63	356 368
Total	230	1.57	10	773	77	1, 215	122	2. 36	342
Bricklayer	251	2. 50	1	152	152	383	882	0.61	631
Bricklayers and laborers	251 251	1. 584 2. 66	1	210 83	210 33	333 88	833 88	0. 84 0. 13	296 669
Total	251	1.731	2	243	122	421	211	0.97	435
Carpenters	251	2.40	11	921	81	2, 210	201	3.67	602
Chargers	230 230 230	3. 41 3. 80 4. 02	1 5 2	197 753 109	197 151 100	673 2, 862 800	672 572 400	0. 86 3. 27 0. 87	785 874 925
Total	230	3. 77	8	1, 149	144	4, 834	542	5, 00	808
Charger and doorman	230 230	3. 60 2. 181	1	10 124	10 12-	36 271	36 271	0.04 0.54	828 508
Chargers' helpers	230 230	1.00 1.50	1 2	11 145	11 73	11 213	11 107	0. 05 0. 63	230 338
Total	230	1. 43	3	156	52	224	75	0.68	330

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. M.—Steel Blooms: United States—Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	Actual daily carn-ings, or daily		Letual co	ndition	for peri	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day	of done.	Earn	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	1otal.	Aver-	eary em- ployés.	earnings per em- ployé.
Doorman and hooker-up	230	\$2.92	1	110	110	\$32 1	\$321	0.48	\$671
Doormen and laborers	251 251	1.76½ 1.90	4	116 60	29 60	205 114	51 114	0.46 0.24	414 477
Total	251	1.81	5	176	35	819	64	0. 70	455
Doorman and telegraphman	230	2.45	1	80	80	276	276	0. 35	791
Drawers	230 230	2.63 4.00	4 8	730 539	183 180	2, 649 2, 155	662 718	2. 17 2. 34	835 920
Total	230	8. 78	7	1, 269	181	4, 804	686	5. 51	871
Engineers	230 230 230	1. 65 1. 85 3. 00	1 1 5	23 18 879	23 13 176	28 21 2, 6 24	38 24 525	0. 10 0. 06 3. 82	280 425 687
Total	230	2. 93)	7	915	131	2, 686	384	3.98	675
Engineer, drop	230	1.09	1	186	186	297	297	0. 81	367
Engineers, locomotive	230 230 230	1. 90 2. 25 2. 39	3 1 1	412 202 171	137 202 171	779 468 409	260 468 409	1. 79 0. 88 0. 74	435 533 850
Total	230	2.11	5	783	157	1, 656	331	3.41	485
Engineer and machinist	230	2. 89	1	288	288	833	833	1. 25	665
Piremen	230 230	1. 65 1. 86	1 26	91 1, 203	91 46	149 2, 225	149 86	0. 40 & 23	877 425
Total	230	1. 831	27	1, 294	48	2, 374	88	5. 63	422
Firemen and firemen's helper. Firemen and laborers. Firemen drop Foremen, drop Foremen, drop, assistant Foreman, laborers Foreman, laborers, assistant Foreman, laborers, assistant Gasman Gasman Gasman's helper	230 230 230 230 251 251 251 251 251 251 251	1. 64 1. 72 1. 55 1. 80 1. 60 2. 65 1. 55 2. 00 1. 65	1 1 4 2 1 1 1 1	117 677 154 191 180 308 146 96 14	117 62 39 96 160 308 146 96 14	192 1, 163 238 340 284 815 228 147 28	192 106 60 170 284 815 228 147 28 21	0.51 2.94 0.67 0.83 0.78 1.23 0.58 0.38 0.06 0.06	377 395 335 409 363 664 392 344 160 372
Heaters	230 230	7. 21) 7. 66	1	198 1 69	198 169	1, 429 1, 295	1, 429 1, 295	0. 86 0. 73	1, 660 1, 763
Total	230	7. 42	2	367	184	2, 724	1, 362	1. 59	1, 707
Heaters' helpers	230 230 230	4. 344 4. 60 4. 86	2 1 1	476 183 217	238 183 217	2, 068 843 1, 056	1, 034 843 1, 056	2.07 0.80 0.94	999 1, 060 1, 118
Total	230	4.53	4	876	219	3, 967	902	3. 81	1, 043
Hookers up	230 230 230 230 230 230	3.70 4.01 4.35 4.49 5.33	1 4 7 1	63 795 885 187 3	63 199 126 1e7 3	293 3, 190 3, 853 840 16	233 798 550 840 16	0. 27 3. 46 3. 35 0. 81 0. 01	851 923 1,001 1,033 1,227
Total	230	£ 20}	14	1, 933	138	8, 132	581	B. 40	908

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. M .- Steel Blooms: UNITED STATES-Continued.

ESTABLISHMENT No. -. -Continued.

	Work-	uany	Δ	ctual co	ndition	for peri	od.	works	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day		Earn	ings.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver- age.	em- ployés.	per em- ployé.
Laborers	251 251 251 251 251	\$1.40 1.50 1.55 1.60	77 13 14 7	5, 141 1, 113 267 551	67 86 19 79	\$7, 229 1, 649 414 874	394 127 30 125	20. 48 4. 43 1. 06 2. 20	\$353 373 389 398
Total	251	1. 431	111	7, 072	64	10, 166	92	28. 17	361
Laborers, boiler	230 230 230	1.45 1.55 1.663	3 86 1	2, 553 21	27 30 21	3, 977 35	39 46 35	0. 35 11. 10 0. 09	334 358 383
Total	230	1.55	90	2, 654	29	4, 128	46	11.54	358
Laborers and metal breakers . Laborer and pressman Laborer and water tender	251 251 251	1.58 1.583 1.83§	3 1 1	211 120 48	70 120 48	333 190 88	111 190 88	0.84 0.48 0.19	396 397 460
Loaders	230 230 230	1.65 1.86 2.00	6 1 1	378 67 178	63 67 178	629 125 356	105 125 356	1. 64 0. 29 0. 77	383 429 460
Total	230	1.78	8	623	78	1, 110	139	2.70	410
Machinists	251 251 251 251 251 251 251 251 251	1. 50 1. 75 1. 85 2. 15 2. 30 2. 33 2. 40 3. 00 3. 45	1 1 1 1 1 1	142 255 92 406 308 6 165 235	71 255 92 135 308 6 - 165 235	213 439 169 870 709 11 396 705 38	107 439 169 290 709 14 396 705 38	0. 57 1. 02 0. 37 1. 62 1. 23 0. 02 0. 66 0. 94 0. 04	377 432 461 538 578 586 602 753 887
Total	251	2. 10	12	1, 620	135	3, 553	296	6.47	550
Machinists' apprentice	251	1.00	1	75	75	75	75	0.30	251
Machinists' helpers	251 251 251 251 251	1.00 1.40 1.50 1.80	1 1 1	12 9 . 10 14	12 9 10 14	12 13 15 25	12 13 15 25	0. 05 0. 04 0. 04 0. 06	251 363 377 448
Total	251	1.44	4	45	11	65	16	0.19	363
Master machinists	251 251	3. 15 3. 84½	1	257 84	257 84	809 323	809 323	1.02 0.33	790 965
Total	251	3, 32	2	341	171	1, 132	566	1.35	833
Metal breakers	230 251 251	1. 90 3. 00 2. 91	15 1 1	1, 785 170 121	119 170 121	3, 327 511 352	222 511 353	7. 76 0. 68 0. 48	429 754 730
Metal worker's helpers	251 230	2.75 1.65	8	393 765	197 96	1, 081 1, 247	541 156	1. 57 3. 33	600 375
Pressmen	251 251 251	1. 65 1. 90 3. 15	1 1 1	25 10 351	25 10 351	41 19 1, 107	41 19 1, 107	0, 10 0, 04 1, 40	412 477 792
Total	251	3. 024	3	386	129	1, 167	389	1.54	750
Pressmen's helpers	251 251	1.40	2 3	163 135	82 45	233 218	117 73	0.65 0.54	359 403
Total	251	1. 51	5	298	60	451	90	1.19	380

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. M.—Steel Blooms: UNITED STATES—Concluded.

ESTABLISHMENT No. - - Concluded.

	Working	Actual daily earn- ings, or daily rate	A	ctual co	ndition	for perio	od.	Condition if workmen had continuous employment.	
Occupation.	days in the period.	pearest	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	per em- ployé.
Pump reversers	230 230	\$1.60 2.50	2 1	474 204	237 204	\$777 510	\$389 510	2.06 0.89	\$377 575
Rollers	230 230	7.16± 7.67	1	217 202	217 202	1,555 1,549	1, 555 1, 549	0.94 0.88	1, 648 1, 764
Total	230	7.41	2	419	210	3, 104	1,552	1. 82	1,704
Shearmen	230 230	5. 39 5. 721	1	195 189	195 189	1,051 1,082	1, 051 1, 082	0. 85 0. 82	1, 240 1, 317
Total	230	5. 55%	2	384	192	2, 133	1,067	1. 67	1, 278
Shearmen's helpers	230 230 230 230	3. 48 3. 62 3. 88 4. 364	2 4 2 2	221 761 352 193	111 190 176 97	769 2, 754 1, 365 842	385 689 683 421	0.96 3.31 1.53 0.84	800 832 892 1, 003
Total	230	3. 75	10	1, 527	153	5, 730	573	6.64	863
Telegraphmen	230	3, 65}	2	178	89	651	326	0.77	841
Watchmen	292 292	1.55 1.65	2	292 242	146 242	453 391	227 391	1.00 0.83	453 472
Total	292	1. 58	3	534	178	844	281	1. 83	462
Water boys	230	. 60	3	20	7	12	4	0.09	138
Water tenders	230 230	2. 14½ 2. 25	1 3	131 367	131 122	281 821	281 274	0. 57 1. 60	493 515
Total	230	2. 21	4	498	125	1, 102	276	2.17	509
Weighmen	230 230 230	1. 50 1. 70 1. 85	1 2 3	4 400 41	200 14	6 683 76	342 25	0. 02 1. 74 0. 18	345 393 426
Total	230	1.72	6	445	74	765	128	1.94	395
Yardman	251	2. 25	1	263	263	596	596	1.05	509
The establishment		2.43	452	37,043	82	89,941	199	155. 63	578

N .- Steel Rails CONTINENT OF EUROPE.

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table VI.]

Bar bandlers	111111111111111111111111111111111111111	\$0.692 .412 .724 1.653 1.815	4 1 2 3 3	215 72 123 196 250	54 72 62 65	\$147 30 89 364 417	\$37 30 45 121 139	2.79 0.94 1.60 2.55 2.99	353 31 56 143 140
Hammermen	77 77	. 97 1. 22	2	129 68	65 68	125 83	63 83	1. 68 0. 68	75 94
Total	77	1.05	3	197	66	208	69	2.56	81
Heaters	77	. 93 1. 26)	3	207	63	192 245	64 82	2. 69 2. 52	71 97
Total	77	1.00	6	401	67	437	73 1	5, 21	84

TABLE XII. - ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

N .- Steel Rails: CONTINENT OF EUROPE-Continued.

ESTABLISHMENT No. - - Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	Condition of workmen had continuous employment.				
Occupation.	days in the period.	nate nearest to average	Dif-		Days of Earnings.		Neces-	Conse- quent	
		daily carn- ings.	ploy-	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Heaters' helpers	77 77 77	\$0.7{} .86 .84 .67	4 5 2 5	244 834 124 307	61 67 62 61	\$182 287 104 206	\$46 57 - 52 41	8. 17 4. 34 1. 61 8. 99	\$57 66 65 62
Rollers	77 77 77 77	. 93 1. 321 1. 58 1. 86	3 2 1 1	201 141 60 78	67 71 60 73	187 187 95 135	62 94 95 135	2. 61 1. 88 0. 78 0. 95	72 102 122 143
Total	77	1.27	7	475	68	604	86	6. 17	96
Rollers, chief	77 77	1.52 2.67	1 2	69 137	69 69	105 366	105 188	0.90 1.78	117 206
Total	77	2.28	3	206	69	471	157	2, 68	176
Rollers' helpers Sawyer Shearman Weighmen	77 77 77 77	. 74 . 85 . 664 . 76	3 1 1 2	190 67 53 151	63 67 55 76	141 57 87 115	47 57 37 58	2. 47 0. 87 0. 71 1. 96	57 68 52 59
The establishment		1.081	55	8, 587	65	8, 896	71	46. 61	84

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table VI.]

Blacksmiths	78	£0, 831	2	134	67	\$112	856	1.73	865
Blacksmiths' helpers	78	47	4	231	58	108	27	2.96	36
Borers	78	491	š l	545	68	270	84	6.99	39
Carriers	78	491	18	1, 190	66	589	33	15. 28	39
Catchers	78	1.71	2	144	72	246	123	1.85	133
Catchers' helper	78	1.49	ī	61	61	91	123 91	0.78	116
Cleaners	78	. 45	2	163	82	75	38	2.09	36
Clippers	78	.50	8	526	66	263	23	6.74	39
Olippers	78	.55	10	561	56	203	11	7.19	44
Cold-bed hands		. 56	10		41	85	6	5.64	4
Door boys	78	. 193		440					15 58
Dressors	78	. 67 <u>i</u>	. 8	590	74	899	50	7. 56	58
Dressers' helpers	78	. 33	8	506	63	166	21	6.49	26
	78	. 45	1	72	73	, 82	32	0. 92	85
Total	78	. 341	9	578	64	198	22	7.41	27
		- 1					i 1	1 1	
Drillers	78	.57	2	133	67	76	38	3.71	45
Drillsmith	78	. 543	1	46	46	25	25	0.59	42
Elevator tenders	78	. 69	4	275	69	190	48	2.53	54
Filere	78	.51	82	1,990	63	1,014	32	25. 51	40
		!	_	_				ا مما	
Foremen, heaters	78	1.64	1	79	78	128	128	1.00	128
	78	1.83	1	80	80	147	147	1.03	143
Total	78	1.74	2	158	79	275	138	2. 03	136
Foremen, laborers	78	. 501	2	114	57	68	34	1.46	47
Foreman, mill	78	8.221	i	74	74	237	237	0.96	250
Foreman, rollers	78	8.37	i	60	60	203	203	0.77	264
Heaters	78	1.56	10	559	- 56	873	87	7, 17	122
Healers	78	1.50	10	239	- 30	919	• • •	(.11)	122
Heaters' helpers	78	.813	85	1,590	45	1, 296	87	20. 38	64
_	78	.93	3	121	40	113	38	1.55	. 73
Total	78	. 821	28	1.711	45	1,409	37	21, 93	64

TABLE XIL-ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

N.-Steel Rails: CONTINENT OF EUROPE-Concluded.

ESTABLISHMENT No. -. -Concluded.

,	Work-	Actual daily earn- ings, or daily	4	ctual co	ndition	or perio	xd.	works	ition if nen had innous yment
Occupation.	days in the period.	rate Dearest to average	Dif-	Days work		Earn	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- éa.	Total.	Aver-	Total.	Aver-	ployés.	average earnings per em- ployé.
Hookers-up	78 78 78 78 78 78	\$0. 621 . 684 . 75 . 761 . 871	1 2 2 13 1	8 16 16 748 8 1,521	8 8 62 8 59	\$5 11 12 573 7 1, 376	\$5 6 6 48 7 53	0. 10 0. 21 0. 21 9. 50 0. 10 19. 50	\$49 54 54 54 60 61
Total	78 78 78 78 78	. 851 . 571 . 561 . 671	14 7	2, 317 1, 020 475 789 352	53 64 59 56 50	1, 984 586 269 532 197	45 37 34 38 28	29. 71 13. 08 6. 09 10. 12 4. 51	67 43 44 53 44
Inspectors	78 78 78	. 474 . 58 . 58	1 1	63 61 78	63 61 73	30 32 42	30 82 42	0. 81 0. 78 0. 94	41 45
Total	78 78 78 78 78 78	. 53 . 53 . 49 . 53 . 53 . 58	25 1 4 1 2	197 318 82 255 82 104 154	66 13 82 64 82 52 77	104 168 40 133 43 60	35 7 40 83 43 90	2. 53 4. 08 1. 05 3. 27 1. 05 1. 33 1. 97	41 41 38 41 41 42 45
Total Numberers	78 78 78	. 55 . 41 . 484	10 1 1	677 73 66	68 73 66	873 80 82	37 30 32	8. 67 0. 94 0. 85	43
Total	78 78 78 7× 78	. 44½ . 79 1. 06½ 1. 20 1. 45	2 1 3 1	139 85 212 80 40	70 • 85 71 80 40	62 67 226 96 58	81 67 75 96 58	1. 79 1. 09 2. 72 1. 03 0. 51	83 83 94 111
Total Press hands Rail handlers Rollors Rollors' helpers	78 78 78 78 78	1. 07 . 513 . 014 2. 05 1. 374 1. 444	6 16 25 3	417 1, 021 1, 286 198 8 16	70 64 51 66 8	447 528 789 406 11 23	75 33 32 135 11	5. 25 13. 09 16. 48 2. 54 0. 10 0. 21	84 40 48 160 107
Total	78 78 78 78 78 78	1. 654 1. 584 1. 254 1. 374 1. 46 1. 614	-4 4 1 4 5	92 27 8 135 320	23 7 8 34 64	112 146 33 11 197 516	37 8 11 49 103	0.35	128 124 95 107 114 128
Total Sawrers Sevants Straightener Sapervisor Tarbine mea	22 23 23 23 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25	1.54) .68) .29 .50 2.12) .48)	14 4 3 1 1 1 2 3	490 268 107 2 46 136 194	35 67 36 2 46 68	757 184 31 1 97 68 152	54 46 10 1 97 33 51	6. 28 3. 44 1. 37 0. 03 0. 59 1. 74 2. 54	121 54 23 39 164 38
Total	78 78	. 70)	6	410	76 (8 73	71 289 26	- 71 - 48	0.97 5.25 0.94	55 30

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United STATES.

ESTABLISHMENT No. -.

[No statement of cost of production for mixed iron and steel is shown in Part I.]

	Work- ing	Actual daily carn- ings, or daily	A	ctual oc	nditio	a for peri	od.	works	ition if nen had nuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day:	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Blacksmiths	313 313	\$1. 50 2. 25	1 2	149 315	149 158	\$222 684	\$222 342	0. 48 1. 0 1	\$466 680
Total	313	1. 951	3	464	155	906	302	1.49	611
Blacksmiths' helper and catcher.	312	1. 37	1	212	212	291	291	0.68	430
Carpenter	313	8.00	1	14	14	41	41	0.04	917
Catchers	313 313 313 313 313	1. 60 1. 70 1. 80 2. 10 2. 15	8 1 2 2	206 128 147 578 261	26 128 147 289 131	213 213 265 1, 214 562	213 265 607 281	0.65 0.41 0.47 1.85 0.83	507 521 564 657 674
	818	(a)	4	(a)	(a)	114	29	(a)	(a)
Total	813	(6)	18	(6)	(b)	2, 700	150	(6)	(b)
Catchers and laborers Catcher and puddlers' helper.	313 313	1.48 (4)	2 1	50 (4)	25 (6)	74 240	87 240	0. 16 (4)	(d)
Catchers and roughers	313 313	1.84½ (a)	8 1	72 (4)	24 (4)	133 887	44 337	0. 23 (4)	578 (a)
Total	313	(b)	4	(6)	(b)	470	118	(b)	(b)
Coal whoeler	313	1. 25	1	324	234	405	405	1.04	291
Engineers	313 313	2.00 2.96	1	348 365	343 365	687 1, 080	687 1, 080	1. 10 1. 17	627 926
Total	813	2. 49}	2	708	354	1, 767	884	2.27	781
Engineer and laborer	813	1: 624	1	122	122	198	198	0, 39	508
Firemen	813 813 813 213	1. 25 1. 35 1. 45 1. 50	1 1 1 1	335 314 389 343	335 314 389 343	419 431 564 514	419 431 564 514	1.07 1.00 1.24 1.10	391 430 454 469
Total	313	1. 39	4	1, 381	845	1, 928	482	4.41	437
Fireman and laborer Heaters heaters' helper Heater and hooker Heater and laborer Heater and roller. Heaters' helpers		1. 24½ (a) (a) (a) (a) (a) (a) (a)	1 11 1 1 1 1 5	220 (a) (a) (a) (a) (a) (a)	220 (a) (a) (a) (a) (a) (a)	274 5, 263 42 284 148 212 559	274 478 42 284 148 212 112	0.70 (6) (6) (6) (6) (6)	(a) (a) (a) (a) (a) (a) (a) (a)
Hookers	313 313 313 318 318 813	1. 15 1. 20 1. 25 1. 80 1. 40	5 2 6 2 2	272 245 539 204 263	54 123 90 102 132	311 294 673 265 870	62 147 112 133 185	0. 87 0. 78 1. 72 0. 65 0. 84	358 376 391 407 440
Total	313	1. 25	17	1, 523	90	1, 913	113	4.86	393
Hooker and laborer	313 313 313	1.57½ (&) 1.50	1 2 1	104 (a)	104 (a)	161 94 3	164 47 3	0. 33 (&) 0. 01	(a) 470

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for the reason shown in the preceding footnots.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	dany	A	etual co	ndition	for peri	od.	works	ition if men had inuous , syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	of done.	Earni	ngs.	Neces-	Conse- quent average
		datly earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Average.	em- ployés.	per em- ployé.
Laborers	313 313 313 313 313 313 313 313	\$1.00 1.05 1.10 1.15 1.20 1.25 1.30 (a)	14 180 1 32 15 11 5	396 6, 721 10 2, 318 1, 427 357 358 (a)	28 37 10 72 95 32 72 (a)	\$400 7, 121 11 2, 6;2 1, 703 445 460 3	\$29 40 11 83 114 40 92 3	1. 27 21. 47 0. 03 7. 41 4. 56 1. 14 1. 14 (a)	\$316 332 844 357 374 300 402 (a)
Total	313	(6)	259	(b)	(6)	12, 785	49	(6)	(6)
Laborers and puddlers Laborers and puddlers' helpers Laborer and rougher. Laborer and shearman	313 313 313 313	(a) (a) (a) 1.18	2 3 1 1	(a) (a) (a) 244	(a) (a) (a) 244	59 115 49 288	38 49 288	(a) (a) (a) 0,78	(a) (a) (a) 369
Laborers and stockers	313 313	1.20 1.56	1	51 77	51 77	· 66	66 120	0. 16 0. 25	405 488
Total	313	1.45}	2	128	64	186	93	0.41	455
Machinists	313 313	1.75 2.25	3 6	28 670	9 112	49 1,506	16 231	0.09 2.14	848 704
Total	313	2, 23	9	608	78	1,555	173	2. 23	607
Masons	313 313	3. 45 3. 75	1	313	313 8	1,080	1, 080 30	1.00 0.03	1, 080 1, 174
Total	313	3.46	2	321	161	1, 110	555	1.03	1,082
Puddlers and puddlers' help-	313 313	(a) (a)	67 12	(a) (a)	(a) (a)	18, 373 1, 729	274 144	(a) (a)	(a) (a)
Puddlers' helpers Puddlers' helper and rougher. Roll turner	313 313 313	(a) (a) 4.00	123 1 1	(a) (a) 232	(a) (a) 222	9, 744 32 890	79 32 890	(a) (a) 0.71	(a) (a) 1, 255
Rollers	313 313 313 313 313	1,50 2,27 5,00 5,50 c 10,40	2 2 2 1 1	187 241 269 261 289	94 121 135 251 289	273 547 1,347 1,447 3,006	1274 274 674 1, 447 3, 006	0.60 0.77 0.86 0.83 0.92	457 710 1,567 1,735 3,256
Total	313	5. 31	8	1, 247	136	6, 620	828	3.98	1,663
Roughers	313 313 313 313	2.00 2.25 2.40 (a)	10 2 2 11	784 59 350 (a)	78 30 190 (a)	1, 567 133 912 2, 491	157 67 456 226	2.50 0.19 1.21 (a)	626 706 751 (4)
Total	313	(b)	25	(6)	(6)	5, 103	204	(b)	(6)
Bersp piler	313	(a)	1	(a)	(a)	294	294	(a)	(a)
Shearmed	313 213 313 313	1. 25 1. 35 1. 60 1. 73	1 7 1	320 1,175 74 311	320 168 74 311	393 1, 574 118 545	393 225 118 545	1. 02 3. 76 0. 24 0. 99	384 418 499 549

e Paid by the quantity. The daily rate of pay and days of work done cannot be given.

No total can be made for the reason shown in the preceding footnots.

Centractor. Includes wages and profits.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United States—Continued.

ESTABLISHMENT No. — - Concluded.

	Work-	GETTA	A	ctual co	d.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	nearest	to D11.		Days of work done.		ngs.	Neces-	Conse- quent
		daily earn- ings.	ploy-	Total.	ATOP.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Squeezer	813	\$1. 25	1	118	118	\$148	\$148	0.38	\$292
Stokers	313 313 313	1.15 1.25 1.60	1 8 1	299 1, 300 818	299 163 318	341 1, 624 514	341 203 514	0.96 4.15 1.02	257 391 506
Total	313	1. 29j	10	1, 917	192	2, 479	248	6.13	405
Straighteners	313 313	1. 20 1. 25	2 2	380 578	190 289	456 723	228 362	1.21 1.85	876 892
Total	313	1. 23	4	958	240	1, 179	295	2.06	385
Teamster	313 313 365	1. 25 (a) 2. 50	1 1 1	313 (a) 335	313 (a) 835	391 998 838	391 998 838	1.00 (a) 0.92	391 (a) 913
The establishment		(b)	625	(b)	(b)	85, 571	137	(8)	(b)

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

						1		1	
Ashmen	313	\$1. 62	14	884	63	\$1, 430	\$102	2.82	\$506
Blacksmiths	313	2.00	2	209	105	417	209	0.67	625
i	313	2.50	1	107	107	262	262	0.34	766
l	813	2,75	1	282	282	775	775	0.90	860
Į.	313	4. 16	1	281	281	1, 171	1, 171	0.90	1, 304
Total	313	2. 981	5	879	176	2, 625	525	2.81	935
Blacksmiths' helpers	813	1.60	1	263	263	440	440	0.84	524
	313	1.75	4	804	201	1, 386	847	2.57	540
•	313	1.87	1	252	252	472	472	0.81	584
Total	813	1. 74	6	1, 319	220	2, 298	283	422	545
Bloom tossers	286	1.70	4	477	119	811	203	1.67	496
Boilermakers.	313	2.13	1	256	256	548	543	0.82	664
	313	2. 50	2	427	214	1,048	524	1.36	768
Total	313	2. 33	3	683	228	1, 591	530	2.18	729
Boilermakers' helper	318	1.00	1	228	228	228	228	0.73	313
Carpenters	313	1.75	1	96	96	169	169	0.31	551
	313	2.00	Ž	206	103	418	209	0.66	635
	313	2.40	ī	10	10	24	24	0.03	751
	313	2.50	15	462	81	1, 151	77	1.48	780
Total	313	. 2. 271	19	774	41	1,762	93	2.48	713
Catchers	286	2.00	ι	10	10	19	19	0.03	543
	286	5. 50	i	120	120	660	660	0.42	1, 573
	286	7.76	ī	240	240	1, 862	1, 862	0.84	2, 219
	286	(a)	2	(a)	(a)	1, 003	502	(a)	(4)
Total	286	(b)	5	(6)	(b)	8, 544	709	(b)	(b)

a Paid by the quantity. The daily rate of pay and days of work done cannot be given a No total can be made for the reason shown in the preceding footnote.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	Actual daily earn- ings. or daily	4	ctual co	ondition	n for peri	od.	works	ition if nen had innous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Average.	Total	Aver-	em- ployés.	earnings per em- ployé.
Catchers and shearmen	286	(a)	4	(a)	(a)	\$3,344	\$836	(a)	(a)
Cindermen	286 286 286	\$1.50 1.60 2.25	1 12 2	10 955 488	10 80 244	1, 531 1, 075	15 128 538	0, 03 3, 34 1, 71	\$429 458 630
Total	286	1. 801	15	-1,453	97	2, 621	175	5.08	516
Coal unloaders	313	(a)	(8)	(a)	(a)	2, 166	(b)	(a)	(a)
Drag-outs	286 286 286 286 286 286	1.40 1.50 1.60 2.12 (a)	1 2 1 4 2	5 328 7 477 (a)	5 164 7 119 (a)	485 11 1,012 337	7 243 11 253 169	0.02 1.15 0.02 1.67 (a)	400 423 449 607 (a)
Total	286	(c)	10	(c)	(c)	1, 852	185	(c)	(c)
Drawers	313 313 313 313	1.50 1.60 1.75 1.90	7 3 1 2	631 615 243 328	90 205 243 164	939 986 428 615	134 329 428 308	2.02 1.96 0.78 1.05	466 502 551 587
Total	313	1. 631	13	1,817	140	2, 968	228	5. 81	511
Drawer and puddlers' belper	286	(a)	. 1	(a)	(a)	442	442	(a)	(a)
Engineers	313 313	2.50 3.00	5	1,043	200	2, 607	521 3	3, 33	782 939
Total	313	2.50	6	1,044	174	2, 610	435	3.33	783
Engineers, locomotive	313 313 313 313	2.50 2.75 3.13± 3.25	1 1 1 1	281 109 309 141	281 109 309 141	727 298 968 458	727 298 968 458	0.90 0.35 0.99 0.45	810 856 981 1, 017
L'otal	313	2,92	4	840	210	2, 451	613	2. 69	913
Fillers and laborers Filler and masons' helper	313 313 313	1. 65 1. 54 1. 46	48 2 1	8, 277 392 28	172 196 28	13, 489 606 41	281 303 41	26. 44 1. 25 0. 09	510 484 458
Firemen, boiler	313 313 313 313 313	1,50 1,60 1,75 1,90 2,00	1 2 6 20 1	7 12 921 1, 840 68	7 6 154 92 68	10 19 1,621 3,449 133	10 10 270 172 133	0, 02 0, 04 2, 94 5, 88 0, 22	447 496 551 587 612
Total	313	1.831	30	2, 848	95	5, 232	174	9. 10	575
Firemen, locomotive	313 313	1. 50 1. 75	3	551 18	184	837 30	279 30	1. 76 0. 06	475 522
Total	313	1. 524	4	569	142	867	217	1. 82	477
Fireman and foreman Foremen, boiler Poreman, coke oven Foremen, gashouse	313 313 313 365	1. 94 2. 00 2. 75 2. 00	1 1 2	20.4 448 200 404	293 224 290 247	568 892 797 988	568 446 797 494	0. 94 1. 43 0. 93 1. 35	607 623 860 730
Foremen, laborers	313	2 70 2 80	1	321 312	321 312	866 874	866 874	1.03	844 877

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. S Number of employée not given.

So total can be made for the reason shown in footnote a.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

RSTABLISHMENT No. -. -Continued.

	Work	dairy	A	ctual co	ndition	for peri	od.	works	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day work	of ione.	Earn	ings.	Neces-	Conse- quent
1		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	sary em- ployés.	average earnings per em- ployé.
Foreman, puddlersGatemen	286 313	\$4.09 1.40	1	286 1, 159	286 290	\$1, 170 1, 635	\$1, 170 409	1.00 3.70	\$1, 170 442
Heaters	286 286 286 286	2.00 3.84 4.86 (a)	1 1 2 16	36 96 345 (a)	36 96 173 (a)	72 369 1, 677 11, 030	72 369 839 689	0. 13 0. 34 1. 21 (a)	1, 099 1, 390 (a)
Total	286	(b)	20	(b)	(b)	13, 148	657	(6)	(b)
Heaters' helpers	286	(a)	5	(a)	(a)	1,706	341	-(a)	(a)
Helpers	286 286 286 286 286 286 286	1. 40 1. 50 1. 75 1. 80 2. 00 2. 25	3 12 7 6 7	920 97 958 974 29	39 77 14 160 139 29	169 1, 412 169 1, 740 1, 936 64	56 118 24 290 277 64	0.41 3.22 0.34 3.35 3.41 0.10	413 433 498 519 568 631
Total	286	1. 77	36	3, 095	86	5, 490	153	10.83	507
Helpers and laborers	313	1.70	2	142	71	242	121	0.45	533
Hookers-up	286 286 286	1.50 1.60 1.75	4 3 7	453 339 772	113 113 110	672 549 1, 349	168 183 193	1.58 1.19 2.70	424 463 500
Total	286	1. 64	14	1, 564	112	2, 570	184	5. 47	470
Hooker-up and piler	313	1.55	1	9	9	14	14	0.03	487
Laborera	313 313 313 313 313 313 313 313 313 313	. 50 . 60 . 75 1. 00 1. 40 1. 50 1. 60 1. 65 1. 75 1. 85 (a)	2 3 6 9 242 22 5 2 2 4	6 7 24 169 13, 473 1, 876 192 16 13 656 (a)	3 2 4 19 56 85 38 8 7 164 (a)	3 4 18 166 18, 954 2, 801 303 26 22 1, 190 153	2 1 3 18 78 127 61 13 11 298 153	0. 02 0. 02 0. 08 0. 54 43. 04 5. 99 0. 61 0. 05 0. 04 2. 10 (a)	157 179 235 307 440 467 494 509 530 568 (a)
Total	313	(b)	298	(6)	(b)	23, 640	79	(b)	(6)
Laborer and mason Laborer and piler	313 313	1.54 1.53	1	13 41	13 41	20 63	20 63	0. 04 0. 13	482 481
Laborers and rollers	313 313	2.00 2.26	1 1	31 31	2 31	70	70	0, 01 0, 10	626 707
Total	313	2, 24	2	33	17	74	37	0.11	702
Laborer and straightener	313	1.68	1	187	187	314	314	0. 60	526
Machinists	313 313 313 313 313 313 313	1. 40 1. 60 1. 75 2. 00 2. 25 2. 50 2. 75	2 2 3 2 2 16 1	5 485 643 403 311 1, 873 281	3 243 214 202 156 117 281	7 781 1, 129 821 717 4, 659 771	391 376 411 359 291 771	0. 02 1. 55 2. 05 1. 29 0. 99 5. 98 0. 90	438 504 550 638 722 779 850
Total	313	2. 22	28	4, 001	143	8, 885	317	12,78	605

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the preceding footnote.

II. Ex. 265—24

O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -- Continued.

	Work	Actual daily earn- ings, or daily		ctual co	adition	for peri	od.	works	ition if men bad inuous orment.
Occupation.	days in the period.	rute nearest to average	Dif- ferent	Day work	s of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	ploy- 6s.	Total	Aver- age.	Total.	Average.	em- ployés.	earnings per em- ployé.
Machinists' helpers	313 313 313 312	\$1.25 1.40 1.50 1.75	1 9 3 1	41 131 334 95	41 15 111 95	\$51 185 508 159	\$51 21 169 159	0.13 0.42 1.07 0.30	\$389 442 476 524
Total	313	1, 50	14	601	43	903	65	1,92	470
Masons	313	2, 20	11	912	83	2, 930	266	2.91	1,006
Masons' helpers	313 313	1.40	20 1	1, 160	58 319	1,629 477	81 477	3,71 1.02	410 468
Total	313	1, 425	21	1, 479	70	2, 106	100	4. 73	416
Pilers	313 313	1.40 1.50	11 18	927 2, 688	84 149	1,320 4,031	120 224	2, 96 8, 59	416 469
Total	313	1:48	29	3, 615	125	5, 351	183	11,55	463
Piler and puucher Poke-jus. Puddlers Puddlers' helpers	313 286 286 286 286	1. 33½ 2. 25 (a) (a)	1 2 17 27	245 (a) (a)	3 123 (a) (a)	551 19, 939 11, 412	276 1, 173 423	0.01 0.86 (a) (a)	(a) (a)
Punchers	313 313 313	.75 .874 1.00	16 1 2	546 89 114	34 89 57	407 78 116	25 78 58	1, 74 0, 28 0, 36	233 274 318
Total	313	. 80	19	749	39	601	32	2. 38	251
Roll turners	313 313	3.50 7.00	1	70 307	70 307	245 2, 149	245 1, 149	0.22 0.98	1, 096 2, 191
Total	313	6.35	2	377	189	2, 394	1, 197	1.20	1, 988
Rell turners' helpers	313	1,40	1	148	148	209	200	0.47	412
Rollers	286 286 280 280 286 286 286	5. 54 6. 30 6. 96 7. 154 7. 72 7. 83 8. 44	1 1 2 1 1 1 1	206 80 73 172 234 131 114	206 80 73 86 234 131 114	1, 141 504 508 1, 231 1, 808 1, 026 962	1, 141 501 508 616 1, 808 1, 026 962	0.72 0.28 0.26 0.60 0.82 0.46 0.40	1, 584 1, 802 1, 990 2, 047 2, 210 2, 240 2, 413
Total	286	7.11	8	1,010	126	7, 180	898	3.54	2, 033
Rollers helpers	286 286	(a) 2.50	12 2	(a) 260	(a) 130	12, 800 650	1,067	(a) 0, 91	(a) 715
Roughers down	286 286 286	3, 574 4, 49 4, 78	2 1 1	260 131 114	130 131 114	929 368 343	465 5×8 545	0.91 0.46 0.40	1, 022 1, 284 1, 367
Total	256	4.08	•	505	128	2,062	516	1.77	1, 168
Roughers-up	256 256 286	3, 37) 3, 64 4, 96) (4)	1)	477 120 210	119 124 240	1, 609 417 1, 192	402 437 1, 192	1.67 0.42 0.54	963 1.042 1.420
Total	::8	(6)	-	(3)		3, 324	475	(4)	(8)

Paid by the quantity. The daily rate of pay and days of work done cannot be given.
 No total can be made for the reason shown in the preceding tostnote.



TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. — - Concluded.

	Work-	daily		ctual co	ondition	for peri	od.	works	ition if nen had inuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total	Aver-	em- ployés.	earninge per em- ployé.
Roughers' helpers	286 286 286	\$1.55 1.75 2.00	2 4 1	20 107 12	10 27 12	\$31 185 23	\$16 46 23	0. 07 0. 37 0. 04	\$443 494 548
Total	286	1.72	7	139	20	230	34	0.48	492
Scrap unloaders	313	(a)	(6)	(a)	(a)	2, 338	(8)	(a)	(a)
Scrapers	286 286	.75 .871	2 2	212 278	106 139	161 245	81 123	0.74 0.97	217 252
Total	286	. 83	4	490	123	406	102	1.71	237
Shearmen	286 286 286 286 286 286	1.50 1.60 1.75 2.00 8.09}	1 15 5 8 1	189 1, 833 1, 126 723 221	189 122 225 241 221	290 2, 911 1, 978 1, 430 1, 789	290 194 396 477 1,789	0. 66 6. 41 3. 94 2. 53 0. 77	439 454 502 566 2, 315
Total	286	2, 05	25	4,092	164	8, 398	336	14. 31	587
Shearmen and shearmen's helpers.	286	(a)	(6)	(a)	(a)	3, 932	(8)	(a)	(4)
Shearmen's helper	286	1.00	1	121	121	121	121	0.42	286
Shippers	313 313	1. 40 1. 50	8	1, 661	54 208	76 2, 490	76 311	0.17 5.31	441
Total	313	1. 494	9	1,715	191	2, 566	285	5. 48	468
Shove-unders	286 286	1.62½ (a)	2	(a) 8	(a)	13 520	130	0.03 (a)	(a)
Total	286	(d)	6	(d)	(d)	533	89	(d)	(d)
Stablemen	365	1.40	4	357	89	500	125	0.98	511
Straighteners	286 286 286 286	1. 40 1. 50 1. 60 1. 75	5 5 1 16	61 68 26 1,454	12 14 26 91	86 105 42 2, 509	17 21 42 157	0. 21 0. 24 0. 09 5, 08	403 442 462 494
Total	286	1.70	27	1,609	60	2, 742	102	5. 62	487
Switchmen	313 313 313	2.50 2.70 2.85	2 3	382 84 339	96 42 113	952 223 967	238 112 322	1. 22 0. 27 1. 08	780 831 893
Total	313	2. 66	9	805	89	2, 142	238	2.57	833
Teamsters (with teams)	313	3.00	2	444	222	1,314	657	1.42	926
Trackmen	313 313	1 40 1.60	4 2	679 120	170 60	953 188	238 94	2. 17 0. 38	439 490
Total	313	1.43	6	799	133	1, 141	190	2.55	447
Watchmen	313 313	1.50 1.75	1	33 295	33 205	52 517	52 517	0.11 0.94	493 549
Total	313	1.73	2	328	164	569	285	1.05	543
Water tenders	313 286	2. 10 1. 75	3 2	695 481	232 241	1, 456 842	485 421	2.22 1.68	636 501
The establishment		(d)	(d)	(d)	(d)	218, 589	(d)	(d)	(d)

Paid by the quantity. The daily rate of pay and days of work done cannot be given.
 Number of employés not given.
 Contractor. Includes wages and profits.
 No total can be made for reasons shown in footnotes a and b.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. —

[No statement of cost of production for mixed iron and steel is shown in Part I.]

	Work-	Actual daily earn- ings, or daily	4	Lotual o	mditio	n of perio	d.	Condition workmen i continuou employme	
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day:		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Boiler tender	818	\$L.50	1	241	261	\$357	\$357	0.77	\$464
Catchers	296 286	1. 60 (a)	1 13	(a)	5 (a)	8 3, 739	8 812	0. 02 (4)	(458 (45)
Total	286	(b)	13	(b)	(6	8, 747	288	(b)	(b)
Catcher and hooker-up Catcher and sticker-in	286 286	(a) (a)	1	(a) (a)	(a) (a)	164 309	164 800	(a) (a)	(e) (e)
Engineers	313 313	1. 50 2. 00	1	320 318	320 318	469 620	469 620	1. 02 1. 02	450 610
Total	813	1.70	2	638	819	1, 089	545	2.04	534
Foreman	213 286 286	2. 60 (a) (a)	1 7 1	(a) (a)	(a) (a)	2, 878 85	12 411 35	0.01 (a) (a)	(a) (a)
Meaters' helpers	286 286 286	.78 1.06 (a)	1 1 7	68 201 (4)	68 201 (4)	52 201 1, 444	52 201 206	0. 24 0. 70 (4)	218 296 (a)
Total	286	(b)	9	(b)	(b)	1, 697	189	(b)	(6)
Hooker-up and laborer Hooker-up and rougher	286 286 286	(a) (a) (a)	2 1 1	(a) (a) (a)	(a) (a) (a)	294 138 172	147 138 172	(a) (a) (a)	(b) (a) (a)
Laborers	313 213 813 213 213 313 313 313	.75 .82 .90 .93 1.00 1.10 1.12 1.20	11 42 25 25 2 1	690 262 4, 295 3, 424 3, 809 231 97 240	63 262 102 137 109 116 97 240	526 212 3, 866 3, 260 3, 805 249 111 283	48 212 92 130 109 125 111 283	2. 20 0. 84 13. 72 10. 94 12. 17 0. 74 0. 31 0. 77	236 253 282 296 313 237 358 368
Total	818	. 941	118	13 048	111	12, 312	104	41.69	295
Paddlors	286 286 286 286 286 286 286	1. 14 1. 36 1. 62 1. 86 2. 11 2. 31 2. 31	16 8 14 13 26 4	756 754 1, 478 1, 836 4, 294 520	47 94 106 141 165 130	862 1, 030 2, 402 3, 417 9, 089 1, 203	54 129 172 263 350 301	2. 64 2. 64 5. 17 6. 42 15. 01 1. 82	326 391 465 532 605 662
Total	286	1.87	81	9, 638	119	18, 003	222	33. 70	534
Puddlers, boss	296 286	1. 90 2. 61	1	804 294	304 294	567 753	567 753	1.06 1.03	532 733
Total	286	2. 201	2	598	299	1, 320	GGO	2.09	631
Puddlers' belpers	286 286 286 286 286	.71 .95 1.21 1.35	21 16 31 13	1, 139 1, 592 4, 901 2, 013	54 100 158 155	807 1, 514 5, 922 2, 723	38 95 191 209	3. 98 6. 57 17. 14 7. 04	203 272 346 387
Total	286	1. 13	81	9, 645	119	10, 965	135	33. 73	325

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for the reason shown in the proceeding footnote.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

O.-Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -. -Concluded.

	Work- ing work-		A	ctual co	od.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	rate nearest to average	Du-	Days work	of done.	Earni	ngs.	Neces-	Consequent average
		daily earn- ings.	em- ploy 6a.	Total.	Average.	Total.	Aver- age.	em- ployés.	earnings
Rollers Roughers Rougher and yard hand Stipper Stickers-in Stocker Weighman Yardmaster	286 286 256 313 286 286 313 313	(a) (a) (a) \$1.85 (a) (a) 1.20 1.75	18 1 1 3 1 1	(a) (a) (a) 342 (a) (a) (a) 248 227	(a) (a) (a) 342 (a) (a) 248 227	\$2, 996 5, 137 67 632 627 727 291 889	\$749 285 67 632 209 727 291 389	(a) (d) (d) 1.09 (d) (a) (a) 0.79 0.73	(a) (a) (a) \$578 (a) (a) (a) 367 538
Yardmon	313 313 313	. 75 . 80 . 85	18 1 2	1, 076 44 33	83 44 17	811 35 28	62 35 14	3.44 0.14 0.11	236 249 266
Total	313	. 76	16	1, 153	72	874	55	3. 69	237
The establishment	•••••	(b) _	368	(b)	(b)	65, 231	177	(b)	(b)

ESTACLISHMENT No. -.

[No statement of cost of production for mixed iron and steel is shown in Part L.]

Ashmen	313 313	\$1.35 1.70	5	668 177	134 177	\$917 301	\$183 301	2. 13 0. 57	\$430 532
Total	313	1.44	6	845	141	1, 218	203	2.70	451
Ashman and fireman	313	1.45	1	239	239	347	347	0.76	. 454
Blacksmiths	313 313	2.40 2.97	3 1	689 292	280 292	1, 648 870	549 \$70	2. 20 0. 93	749 933
Total	313	2. 561	4	981	245	2, 518	630	8. 13	803
Blacksmith and blacksmiths' helper.	813	1. 98	1	46	46	91	91	0. 15	619
Blacksmiths' helpers	313 813	1. 5 01 1. 53	8 1	1, 346 68	1 68 6 8	2, 147 104	268 104	4. 30 0. 22	499 479
Bolt cutters	313 313 313	1. 21 1. 42 1. 71	7 2 1	714 262 152	102 131 152	865 372 260	124 186 260	2. 28 0. 84 0. 49	379 414 535
Total	318	1. 321	10	1, 128	113	1, 497	150	3. 61	415
Bolt packers	813	. 90	2	527	264	465	233	1. 68	276
Bricklayers	313 313 313	3, 00 3, 27 3, 50	4 2 6	7 66 109	2 33 18	21 216 383	5 108 64	0, 02 0. 21 0, 35	939 1, 024 1, 100
Total	313	3.40	12	182	15	620	52	0. 58	1,006
Bricklayers' helpers	813 818	1. 25 1. 57	2	590 36 2	295 362	739 570	370 570	1. 88 1. 16	392 493
Carpenters	313 318 313	2.00 2.20 2.25	2 1 2	22 28 451	11 28 226	44 62 1, 014	22 62 507	0.07 0.09 1.44	626 693 704
Total	813			501	100	1, 120	224	1.60	700

w Paid by the quantity. The daily rate of pay and days of work done cannot be given. δ No total can be made for the reason shown in the preceding footnote.

TATE THE - CONTRACTORAL COME AND EARNINGS—Continued.

STATES—Continued.

	14		ermai or	andition	a for peri	od.	works	ition if nen had inuous yment.
•	Total Tables	Only Howard	Day	of done.	Earni	ngs.	Neces-	Conse- quent average
	1	-	Total.	Aver-	Total.	Aver- age.	em- ployès.	per em- ployé.
:	* *		128 387 300	128 194 300	\$160 525 338	\$160 263 338	0.41 1.24 0.96	\$391 425 353
#	1 4p 4p 2p 2p 2p 2p 2p 2p 2p 2p 2p 2p 2p 2p 2p	* terroridan	76 233 3 70 76 287 825	76 117 3 70 76 96 206	99 403 6 157 182 1,034 4,061	99 202 6 157 152 345 1,015	0. 24 0. 74 0. 01 0. 22 0. 24 0. 92 2. 64	408 541 626 702 750 1, 128 1, 541
••	A 36	1.3	1,570	121	5, 942	457	5.01	1, 185
		1	205	205	289	289	0.65	441
	5.1°	1	129 259	129 259	293 893	293 893	0.41	1, 079
• •	l m		363	194	1, 186	593	1.24	957
• 2 3 • 2	2 N 2 N 2 N	:		241 173	529 207 783		0. 77 0. 28 0. 55	697 728 1, 417
	1) .2) . 2)	3 2 2	209 1.36 1.373	20 68 80	148	92 74 188	0, 56 0, 43 4, 39	321 341 428
		:3	1.30	119	2, 204	154	5. 68	405
	1, 130	1	362	262	313	313	. 0.84	374
	, ,3 ,3	:	1.0 1.38 213	100 123 108		115 16J 145	0. 32 0. 41 0. 69	360 391 421
	1.74	-	143	111	564	141	1. 42	398
•	* 2 ' 9 '	:	102 208 206 144 208	:02 2/6 2/6 144 2/4	124	136	'	190 205
	24	•	:68	174	665	. 133	2 ::	. 240
	10	:	1 od 34 o 30 o 30 c 30 c	145 (83 379)	1, 575	041 378 649 492 634		517 (23 657 694 722
		:	. ak	213	5, 430	453	ž. "đ	656
, ,	, 14	•	275 ##	273 88	465 1#1	453 121	0. 48 3 5	529 644
X. 0		:	كماد	\$ 2	646	:;	1 15	337
		•	#11 # # 25	141 241 141	3, 101 1, 371 8, 543 75	: 7	4 11 2 21 2 21 3 21	502 1, 410 4.23 , 480
	., .		•	•	. :3	. 75	0. 15	, 490

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

	Work-	Actual daily earn- ings.or daily		etual co	ndition	a for peri	od.	workn conti	ition if nen had nuous yment
Occupation.	ing days in the period.	rate nearest to	Dif- ferent	Days work		Earn	nge.	Neces-	Conse- quent average
		daily earn- ings.	om- ploy- és.	Total.	Aver-	Total.	Aver- age.	ployés.	earnings per em- ployé.
Firemen and laborers	313 313	\$1.44 <u>1</u> 1.73	5 1	633 217	127 217	\$915 375	\$183 375	2.02 0.60	\$452 541
Total	313	1.52	6	850	142	1, 290	215	2.71	475
Firemen and water tenders	313	1. 76}	2	655	328	1, 155	578	2.09	552
Foremen	313 313	2. 11 2. 85	1 3	313 947	313 316	660 2, 697	660 899	1. 00 3. 03	660 891
Total	313	2. 661	4	1, 260	315	3, 357	839	T 03	834
Foreman, blacksmiths Foreman, bricklayers Foremen, gashouse Foreman and heater	313	3.45 4.31 2.50 4.43	1 1 2 1	302 313 709 307	302 313 355 307	1, 042 1, 350 1, 773 1, 362	1, 042 1, 350 887 1, 362	0. 96 1. 00 1. 94 0. 98	1, 080 1, 350 913 1, 389
Hesters	313 313 313 313 313 313 313 313 313 313	8. 41 3. 88 4. 094 4. 47 4. 521 5. 15 5. 65 5. 98 6. 111 6. 86 7. 091 7. 38	222121835011	142 345 466 136 145 14 399 526 1, 184 399 235 243	71 173 233 136 73 14 133 175 237 200 235 243	484 1, 342 1, 909 608 656 72 2, 254 3, 146 7, 242 2, 738 1, 667 1, 793	242 671 955 608 328 72 751 1,049 1,448 1,369 1,667 1,793	0. 45 1. 11 1. 49 0. 43 0. 46 0. 04 1. 27 1. 68 3. 78 1. 27 0. 75	1, 067 1, 214 1, 282 1, 309 1, 416 1, 610 1, 768 1, 872 1, 914 2, 148 2, 220 2, 310
Total	313	5, 64	25	4, 235	169	23, 911	956	13. 51	1, 767
Heaters and heaters' helpers	313 313 313	. 8. 43 3. 74 4. 73	1 2 2	206 244 459	206 122 230	704 912 2,171	704 456 1, 086	0. 66 0. 78 1. 47	1, 070 1, 170 1, 480
Total	313	4. 16	5	909	182	3, 787	757	2,91	1, 304
Heaters' helpers	313 313 313 313 313 313	1. 75 2. 00 2. 13 2. 25 2. 42 2. 92	1 7 3 17 1	113 1, 092 322 2, 033 260 190	113 156 107 120 260 190	195 2, 218 686 4, 511 629 556	193 317 229 265 629 556	0. 36 3. 49 1. 03 6. 50 0. 83 0. 61	540 636 667 695 757 916
Total	313	2. 19	30	4,010	134	8, 793	293	12.82	686
Heaters' helpers and laborers. Heaters' helpers and pilers Heaters' helper and puddlers' helper.	313 313 313	1.85 1.79 2.15	5 2 1	784 450 141	157 230 141	1, 450 823 304	290 412 804	2.50 1.47 0.45	579 560 675
Hookers-up	313 313 313 313 313 313 313	1.25 1.35 1.50 1.65 1.75 1.80 2.261	2 3 1 1 3 7	152 332 136 225 461 1,040 52	76 111 136 225 154 149 52	190 446 205 371 804 1,875 119	95 149 205 371 268 268 119	0. 49 1. 06 0. 43 0. 72 1. 47 8. 32 0. 17	391 420 472 516 546 716
Total	313	1. 67	18	2, 398	133	4, 010	223	7. 66	523
Hookers-up and laborers	313 313	1.094 1.36		166 80	166 80	182 109	183 109	0. 53 0. 26	343 426
Total	313	1.18	2	246	123	291	146	0.79	370

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

	Work-	ing the	4	Lotual or	mditio	n of perio	d.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate to average	Dif-	Day:	of lone.	Earn	inge.	Neces-	Conse- quent
		daily earn- ings.	om- ploy- 66.	Total.	ago.	Total.	Aver-	eary cm- ployée.	average earnings per em- ployé.
Boiler tender	313	\$L 50	1	241	241	\$357	\$357	0.77	\$161
Catchers	286 286	1. 60 (a)	1 13	(a) 5	5 (s)	8 3, 739	8 312	0. 02 (a)	(a)
Total	286	(b)	13	(6)	(6	8, 747	288	(b)	(6)
Catcher and hooker-up Catcher and sticker-in	286 286	(a) (a)	1	(a) (a)	(a) (a)	164 309	164 800	(e) (e)	(s) (s)
Engineers	313 313	1. 50 2. 00	1	820 818	320 318	4 69 620	469 620	1. 02 1. 02	450 610
Total	313	1. 70	2	638	819	1, 089	545	2.04	534
Foreman	313 286 286	3. 00 (a) (a)	1 7 1	(a) (a)	(a) (a)	12 2, 878 35	12 411 35	0. 01 (a) (a)	(a) (a)
Mesters' helpers	286 286 286	.75 1.06 (6)	1 1 7	68 201 (a)	68 201 (a)	52 201 1, 444	52 201 206	0. 24 0. 70 (4)	219 286 (a)
Total	286	(9)	9	(b)	(b)	1, 697	189	(b)	(6)
Hooker-up and laborer Hooker-up and rougher	286 286 286	(a) (a) (a)	2 1 1	(a) (a) (s)	(a) (a) (a)	294 138 172	147 138 172	(a) (a) (a)	(b) (a) (a)
Laborers	318 313 313 313 213 313 318 318	.75 .82 .90 .95 1.00 1.10 1.12 1.20	11 42 25 35 2	690 262 4, 295 8, 424 3, 809 231 97 240	63 262 102 137 109 116 97 240	526 212 8, 866 3, 260 8, 805 249 111 283	48 212 92 130 109 125 111 283	. 2. 20 0. 84 13. 72 10. 94 12. 17 0. 74 0. 81 0. 77	239 253 262 296 318 837 358
Total	318	. 941	118	18 048	111	12, 312	104	41.69	295
Puddlors	286 286 236 286 286 286	1. 14 1. 36 1. 62 1. 96 2. 11 2. 81	16 8 14 13 26 4	756 754 1,478 1,886 4,294 520	47 94 106 141 165 130	862 1, 080 2, 402 3, 417 9, 089 1, 203	54 129 172 263 850 801	2. 64 2. 64 5. 17 6. 42 15. 01 1. 82	826 391 465 532 605 662
Total	286	1.87	81	9, 638	119	18, 003	222	33. 70	534
Puddlers, boss	286 286	1. 90 2. 61	1	804 294	304 294	567 753	567 753	1.06 1.03	538 733
Total	286	2. 20}	2	598	299	1, 320	GGO	2.09	631
Puddlers' lielpers	286 286 286 286	.71 .95 1.21 1.35	21 16 31 13	1, 189 1, 592 4, 901 2, 018	54 100 158 155	807 1, 514 5, 922 2, 722	33 95 191 209	8. 98 5. 57 17. 14 7. 04	203 272 346 387
Total	286	1. 13		9, 645	119	10, 965	135	33. 73	

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for the reason shown in the preceding footnote.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

	Work-	Actual daily earn- ings, or daily	A .	ctual co	ndition	for perio	d.	works	ition if nen had nuoua yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Aver-	Total.	Average.	em- ployés.	earninge per em- ployé.
Nut dresser	313 313	\$1.45 <u>1</u> 1.56 <u>1</u>	1 2	101 87	101 44	\$147 136	\$147 68	0.32 0.28	\$456 489
Oilers	313 313	1.35 1.57	4	571 810	143 310	75 9 488	190 488	1. 82 0. 99	416 493
Total	313	1.41	5	881	176	1, 247	249	2. 81	443
Oiler and puddlers' helper	313	1.54	1	191	191	295	205	0. 61	483
Packers	813 313	. 95 1. 35	1	181 87	181 87	172 119	172 110	0. 58 0. 28	297 428
Total	313	1.08	2	268	134	291	146	0.86	340
Pilers	313 313 313 813	1. 35 1. 45 1. 574 1. 65	7 1 1 1	1, 492 255 227 204	213 255 227 204	2, 017 363 353 339	288 363 353 339	4. 77 0. 81 0. 73 0. 65	423 446 467 520
Total	313	1.41	10	2, 178	218	3, 072	307	6.96	441
Policemen	813	1.25	2	267	134	833	167	0. 85	390
Puddlers	313 313 318 313 313 318 313	3. 23 3. 65 3. 884 4. 10 4. 604 4. 744	1 2 3 6 1	82 141 438 1,017 202 141	82 71 146 170 202 141	268 515 1, 702 4, 170 930	265 258 567 695 930 660	0. 26 0. 45 1. 40 3. 25 0. 65 0. 45	1, 012 1, 143 1, 216 1, 283 1, 441 1, 485
Total	813	4.08	14	2, 021	144	8,251	569	6. 46	1, 278
Puddler and puddlers' helper.	318	3. 201	1	204	204	654	654	0.65	1, 003
Puddlers' holpers	313 813 313 313 313 313	1. 154 1. 53 1. 894 2. 02 2. 63 2. 77	1 6 8 2	32 32 355 1,062 418 201	32 82 59 133 209 201	87 49 672 2, 146 1, 100 557	37 49 112 268 550 557	0. 10 0. 10 1. 13 3. 39 1. 34 0. 64	862 479 592 632 824 867
Total	313	2.17	19	2, 100	111	4, 561	240	6.70	680
Puddlers' helper and rougher-	313	2. 20	1	86	86	189	189	0. 27	688
up. Puddlers' helper and shear- men's helper.	813	1. 54	1	74	74	114	114	0. 24	463
Pullers-down	313 313 313	1.35 1.574 1.80	2 4 4	876 825 687	188 206 172	520 1, 303 1, 251	260 326 313	1. 20 2. 64 2. 19	433 494 570
Total	313	1. 63	10	1, 888	189	8, 074	307	6. 03	510
Pullers-up	313 313	1.00 1.25	1 8	96 580	96 177	93 661	93 220	0. 31 1. 69	303 300
Total	313	1, 204	4	626	157	754	189	2.00	377
Punchers	313 313	1.80 2.34	8 2	456 91	152 46	843 214	281 107	1. 46 0. 29	579 736
Total	313	1.93	5	547	109	1, 057	211	1. 75	605
Roversors	313 313	1. 124 1. 20	5 4	615 637	128 159	690 769	138 192	L 96 2.04	351 378
Total	813	1. 16)	9	1, 252	129	1, 459	163	4.00	365

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

	Working	Actual daily earn- ings, or daily		ctual o	onditio	n for peri	od.	works	ition if men had inuous syment.
Occupation.	days in the period.	nearest	Dif-	Day	s of done.	Earn	ings.	Neces	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	A verage.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Carpenters' helper Cartmen Cartmen's helper	313 313 313	\$1.25 1.35 1.12	1 2 1	128 387 300	128 194 300	\$160 525 338	\$160 263 338	0.41 1.24 0.96	\$391 425 353
Catchers	313 313 313 313 313 313 313	1. 301 1. 73 2. 00 2. 241 2. 391 3. 601 4. 92	1 2 1 1 2 4	76 233 3 70 76 287 825	76 117 3 70 76 96 206	99 403 6 157 182 1, 034 4, 061	99 202 6 157 182 345 1,015	0. 24 0. 74 0. 01 0. 22 0. 24 0. 92 2. 64	408 541 626 702 750 1, 128 1, 541
Total	313	3.78	13	1,570	121	5, 942	457	5.01	1, 185
Catcher and hooker-up	313	1.41	1	205	205	289	289	0.65	441
Catchers and roughers	313 313	2. 27 3. 45	1	129 259	129 259	293 893	293 893	0.41	1, 079
Total	313	3.05	2	838	194	1, 186	593	1.24	957
Catcher and straightener Charger Charger and heater	313 313 313	2. 20 2. 25 4. 52	1 1 1	241 89 173	241 89 173	529 207 783	529 207 783	0. 77 0. 28 0. 55	687 728 1, 417
Cindermen	313 313 313	1.05 1.09 1.35	3 2 10	269 136 1, 375	90 68 138	276 148 1, 880	92 74 188	0.86 0.43 4.39	321 341 428
Total	313	1, 294	15	1,780	119	2, 304	154	5. 68	405
Cinderman and laborer	313	1.19	1	262	262	313	313	0.84	374
Counters	313 313 313	1.15 1.25 1.35	1 1 2	100 128 215	100 128 108	115 160 289	115 160 145	0.32 0.41 0.69	360 391 421
Total	313	1. 27	4	443	111	564	141	1. 42	398
Door boys	313 313 313 313 313	.60 .65 .70 .85	1 1 1 1 1 1	102 208 206 144 208	102 208 206 144 208	62 136 142 124 201	136 142 124 201	0. 33 0. 66 0. 66 0. 46 0. 66	190 205 216 270 302
	313	. 761	5	868	174	665	133	2. 77	240
Engineers	313 313 313 313 313	1. 65 2. 00 2. 10 2. 25 2. 30	1 5 1 4	146 944 309 882 301	146 189 309 221 301	1, 878 649 1, 968 694	241 378 649 492 694	0.47 3.02 0.99 2.83 0.96	517 623 657 698 722
Total	313	2, 10	12	2, 582	215	5, 430	453	8. 26	658
Engineers and machinists	313 313	1.69 2.05½	1	275 88	275 88	465 181	465 181	0. 88 0. 28	529 644
Total	313	1.78	2	363	182	646	323	1.16	557
Firemen	313 313 313 313	1.60 4.71 1.35 1.594	14 1 45 1	1, 971 291 6, 327 47	141 291 141 47	3, 162 1, 371 8, 545 75	1, 371 190 75	6, 30 0, 93 20, 21 0, 15	1, 470 423 499

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

ESTABLISHMENT No. - - Concluded.

•	Work-	asn2	4	ectual co	od.	works	ition if nen had nuous yment.		
Occupation.	days in the period.	rate mearest to average	Dif.	Days work	of done.	Earnings.		Neces-	Consequent
		daily earn- ings.	em- ploy- éa.	Total.	Aver-	Total	Aver-	em- ployés.	earnings per em- pioyé.
Slotters	818 813 818 818	\$1.35 1.46 1.71 2.22	1 1 1 1	29 37 48 150	29 37 48 150	\$38 53 82 832	\$38 • 53 82 832	0.09 0.12 0.15 0.48	\$416 - 448 535 698
Total	813	1.91	4	264	66	505	126	0.84	500
Sticker-in Stocker	313 313	2. 25 1. 75	1	56 238	56 238	125 396	125 396	0. 18 0. 76	600 523
Straighteners	313 318 313	1. 35 1. 571 1. 75	5 14 1	405 2, 298 106	81 164 106	563 8, 629 185	111 259 185	1.29 7.34 0.34	427 494 548
Total	313	1. 55	20	2, 809	140	4, 367	218	8. 97	487
Switchman	313	1. 91	1	117	117	223	223	0. 37	597
Teamsters	813 813	1. 121 1. 85	8 1	111 313	87 813	125 414	42 414	0. 35 1. 00	262 414
Total	313	1. 27	4	424	106	539	135	1.35	396
Telegraphmen	313 313 313 313 313	1. 35 1. 55 1. 70 1. 80 2. 00	1 6 1 2	67 81 606 236 369	67 31 101 236 185	90 48 1, 089 431 757	90 48 173 431 279	0. 21 0. 10 1. 94 0. 75 1. 18	420 485 587 572 642
Total	313	1. 804	11	1,309	119	2, 365	215	4.18	566
Water boy Water tenders	313 313	. 65 2. 12 <u>1</u>	1	17 1, 264	17 316	11 2, 690	11 678	0. CS 4. V4	208
Weighmen	313 318 313 313 313	1.50 1.611 1.721 1.75 2.00		87 98 813 852 264	87 98 313 117 264	127 159 540 628 526	127 159 540 209 528	0. 28 0. 31 1. 00 1. 12 0. 84	457 500 540 558 624
Total	313	1, 771		1, 114	159	1, 980	283	2, 55	554
Yardmaster	313	2.72	1	313	813	1, 960 852	263 852	1.00	852
The establishment				138, 225	101	264, 865	193	441, 20	600

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Alleymen	287	\$1.75	2	412	206	\$725	\$363	1.44	\$505
Assistants at furnace	287 287 287	1. 67 1. 75 1. 85	1 1 2	50 87 350	50 87 175	83 151 651	83 151 826	0. 17 0. 30 1. 23	47 6 4 96 534
Total	287	1.814	4	487	122	885	221	1.60	522
Blacksmith	313 313 287 813 313	3. 60 1. 811 1. 50 1. 711 4. 00	1 3 1 2 4	310 927 235 356 388	310 809 235 178 85	1, 120 1, 664 353 610 1, 352	1, 120 561 353 305 338	0. 99 2. 96 . 82 1. 14 1. 98	1, 131 560 431 536 1, 253

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United States—Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	nearest	Dif-	Day work	s of done.	Earn	ings.	Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	Aver- age.	Total	Aver- age.	em- ployés.	earnings per em- ployé.
Hookers-up and roughers	313 313	\$1.78± 2.23±	1 2	213 224	213 112	\$380 501	\$380 251	0.68 0.72	\$558 700
Total	313	2,01	3	437	146	881	294	1.40	631
Hooker-up and straightener	313 313	1. 50 1. 35	1	198 308	198 308	297 416	297 416	0.63 0.98	470 423
Laborers	313 313 313 313 313 313 313 313 313 313	1.05 1.10 1.121 1.20 1.25 1.30 1.40 1.45 1.55 1.62 1.814 2.00	5 11 236 25 37 1 272 30 27 16 5 13	137 508 14, 031 1, 063 2, 538 180 18, 163 2, 470 2, 077 1, 204 317 3, 045 307	27 46 50 43 69 180 67 82 77 75 63 234	143 555 15, 840 1, 267 3, 195 233 24, 443 3, 432 3, 049 1, 848 516 5, 520 614	29 50 67 51 86 233 90 114 113 116 103 425 614	0. 44 1. 62 44. 83 3. 40 8. 11 0. 58 58. 03 7. 80 6. 64 2. 85 1. 01 9. 73 0. 98	327 342 353 373 394 405 421 435 459 480 509 567 620
Total	313	1.314	679	46, 040	68	60, 655	89	147. 11	412
Laborera (boys)	313 313 313 313 313 313 313 313 313	.60 .70 .80 .85 .90 .95 1.00 1.15 1.20	1 45 7 49 11 5 8	8 1, 422 931 3, 410 903 277 346 54 211	8 32 133 70 82 55 48 64 70	1,000 727 2,882 817 257 385 61 248	5 22 104 59 74 51 48 61 83	0. 03 4. 54 2. 97 10. 80 2. 88 0. 88 1. 23 0. 17 0. 67	196 220 244 265 283 290 312 354
Total	313	. 84	130	7,602	58	6, 382	49	24. 26	263
Laborers and puddlers helpers	313 313	1.51 2.21	1	123 24	62 24	186 53	93 53	0, 39 0, 08	473 691
Total	313	1. 623	3	147	49	239	80	0. 47	509
Laborers and punchers	313 313	1.66± 2.00	1	83 183	83 183	138 366	138 366	0. 27 0. 58	520 620
Total	313	1, 89	2	266	133	504	252	0.85	593
Laborer and reverser Laborers and shearmen	313 313	1. 60 1. 451	1 2	227 392	227 196	362 570	362 285	0. 73 1. 25	409 455
Laborers and straighteners	313 313	1.56± 1.87	2	439 246	220 246	688 459	344 459	1.40 0.79	491 584
Total	313	1. 671	3	685	228	1, 147	382	2.19	524
Laborer and switchman Laborer and telegraphman Laborer and weighman	313 313 313	1.77 1.551 1.671	1 1 1	306 220 170	306 220 170	542 342 285	642 342 285	0.98 0.70 0.54	554 487 525
Machiniste	313 313 313 313 313	1.35 2.20 2.50 2.75 3.30	1 2 2 7 1	282 327 211 1, 547 281	282 164 106 221 281	381 720 527 4, 253 928	381 360 264 608 928	0.90 1.04 0.67 4.94 0.90	423 689 782 860 1,034
Total	313	2.57	13	2, 648	204	6, 809	524	8.45	805

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

*	Work-	Actual daily earn- ings,or daily	A	otual co	mditio	for peri	od.	works	ition if wen had inuous syment.
Occupation.	days in the period.	nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver- age.	em- ployés.	average earnings per em- ployé.
Helper	287 287	\$1.871 1.70	1 5	1, 159	8 232	\$15 1,976	\$15 394	0. 03 4. 04	\$538 488
Laborers	313 313 313 313 313 313 313 313 313 313	1.20 1.25 1.30 1.35 1.37 1.40 1.45 1.48 1.50 1.55	2 70 17 28 15 11 12 5 9	298 2, 673 2, 583 2, 102 837 1, 836 1, 441 1, 057 835 915	149 38 152 75 56 167 120 211 93 305	361 3, 359 3, 354 2, 823 1, 153 2, 568 2, 076 1, 563 1, 255 1, 402	181 48 197 101 77 233 173 313 189 467	0. 95 8. 54 8. 25 6. 72 2. 67 5. 87 4. 60 3. 38 2. 67 2. 92	379 393 406 420 431 438 451 463 470 480
Total	313	1.36	172	14, 577	85	19, 914	116	46.57	428
Laborers (boys)	313	.45	8	604	76	274	34	1. 93	142
Metal breakers	313 313	1. 80 1. 85	11	96 754	189	172 1, 388	16 347	0.31 2.41	561 576
Total	313	1. 83	15	850	57	1, 560	104	2.72	574
Millwright	313	3. 32	1	430	430	1, 429	1, 429	1.37	1,040
Millwrights, assistant	313 313	2.00 2.10	1	35 419	35 419	71 879	71 879	0.11 1.34	635 657
Total	313	2, 09	2	454	227	950	475	1.45	655
Ore grinder	313 313 287 287 287 287 287 287	1.70 1.80 1.50 3.40 3.89 2.10 1.25	1 1 5 109 1 109 3	355 278 1, 222 14, 746 276 14, 746 160	355 278 244 135 276 135 53	505 492 1, 833 50, 137 1, 074 30, 966 199	605 492 367 460 1,074 284 66	1. 13 0. 89 4. 26 51. 38 0. 96 51. 38 0. 56	533 554 431 976 1, 117 603 357
Pullers-up (boys)	287 287	.45 .50	2 4	293 244	147 61	138 120	69 30	1.02 • 0.85	135 141
Total	287	.48	6	537	90	258	43	1.87	138
Roll turner	287	8.50	1	281	281	2, 384	2, 384	0.98	2, 435
Rollers	287 287 287 287 287 287 287 287 287	3.00 4.00 5.00 a 5.06 a 6.16 a 6.62 a 7.60 a 9.75 a 19.23	. 1 2 1 1 1 1 1 1 1 1	228 233 505 228 235 147 205 254 273	228 233 253 228 235 147 265 254 273	684 932 2,570 1,154 1,448 974 2,015 2,477 5,250	684 932 1, 285 1, 154 1, 448 974 2, 015 2, 477 5, 250	0. 79 0. 81 1. 76 0. 79 0. 82 0. 51 0. 92 0. 89 0. 95	861 1, 148 1, 461 1, 453 1, 768 1, 902 2, 182 2, 799 5, 519
Total	287	7.39	10	2, 368	237	17, 504	1,750	8. 24	2, 121
Roughers	287 287 287 287	2, 40 3, 244 3, 544 3, 88	6 5 6 1	1, 392 1, 119 1, 472 265	232 224 245 265	8, 341 8, 630 5, 215 1, 028	557 726 869 1, 028	4. 85 3. 90 5. 13 0. 92	689 931 1, 017 1, 113
Total	287	3.11	18	4, 248	236	13, 214	734	14. 80	893
Sawyers Scrap wheeler	287	1.58 1.51 actor. I	6	1, 136 390	189 390	1, 795 588	200 588	3.96 1.36	454 433

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

O.-Mixed Iron and Steel: UNITED STATES-Continued.

	Work	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous yment.
Occupation.	days in the period.	nate nearest	Dit	Day		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	ploy- és.	Total.	Average.	Total.	Aver- age.	sary em- ployés.	earnings per em- ployé.
Roll cleaners	313 313	\$1.121 1.35	1 1	279 243	279 243	\$314 328	\$314 328	0. 89 0. 78	\$352 423
Total	313	1, 23	2	522	261	642	321	1.67	385
Roll turner	313	6.71	1	313	313	2, 100	2, 100	1.00	2, 100
Rollers	313 313 313 313 313 313 313 313	3,59 5,40 6,28 7,22½ 7,71 7,961 8,75½ 8,84 9,50½	2 1 2 1 2 1 1	279 5 126 461 166 275 110 105 81	140 5 126 232 166 138 110 105 81	1, 001 27 791 3, 352 1, 280 2, 190 963 928 770	501 27 791 1, 676 1, 280 1, 095 963 928 770	0, 89 0, 02 0, 40 1, 48 0, 53 0, 88 0, 35 0, 34 0, 26	1, 123 1, 690 1, 965 2, 261 2, 413 2, 493 2, 740 2, 766 2, 975
Total	313	7.01	12	1,611	134	11, 302	942	5.15	2, 196
Roller and rougher-down Roller and weighman	313 313	3, 304 2, 48	1	206 252	206 252	681 625	681 625	0.66 0.81	1, 035 776
Rollers' helpers	313 313 313	2.00 2.25 2.64	5 1 1	897 106 129	179 106 129	1, 794 237 339	359 237 339	2.87 0.34 0.41	626 700 823
Total	313	2, 09	7	1, 132	162	2, 370	339	3. 62	655
Roughers	313 313 313 313 313 313 313 313 313 313	2, 331 2, 661 2, 75 3, 00 3, 351 3, 49 3, 821 4, 02 4, 481 5, 041	121114225121	273 273 90 289 558 27 93 263	3 2 4 7 68 45 145 112 27 47 263	7 8 11 21 916 314 1, 104 2, 242 115 417 1, 327	7 4 11 21 229 157 552 448 115 209 1,327	0. 01 0. 01 0. 02 0. 87 0. 29 0. 92 1. 78 0. 09 0. 30 0. 84	730 835 861 939 1, 050 1, 196 1, 258 1, 333 1, 403 1, 579
Total	313	4. 021	22	1,610	73	6, 482	295	5. 14	1, 260
Roughers-down	313 313 313	2. 48 3. 621 3. 85	1 6 5	23 645 823	23 108 165	57 2, 337 3, 166	57 390 633	0. 07 2. 06 2. 63	776 1,134 1,204
Total	313	3.73	12	1,491	124	5, 560	463	4.76	1,167
Roughers-down and straight- eners.	313	3.00	2	446	223	1, 337	669	1.42	938
Roughers-up	313 313 313 313 313 313	2, 674 2, 964 3, 15 3, 39 3, 78 4, 341	21334431	40 246 278 840 280 153	20 82 70 210 140 153	107 729 876 2, 849 1, 059 664	54 243 219 712 530 664	0. 13 0. 79 0. 89 2. 68 0. 89 0. 49	837 928 986 1, 062 1, 184 1, 358
Total	313	3.42	16	1,837	115	6, 284	393	5.87	1,071
Shearman and shearman's helper.	313 313	1.611	23 1	3, 689 176	160 176	5, 954 263	259 263	11.79 0.56	505 468
Shearmen's helpers	313 313	1. 521 2. 30	8	1,472 317	245 317	2, 247 728	375 728	4.70 1.01	478 719

PART II.—TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

	Work-	Actual daily earn-ings, or daily	A	ctual oo	ndition	o for peri	od.	works	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day:	of lone.	Earni	ngs.	Noces-	Conse- quent
		daily earn- ings.	em- ploy- ée.	Total.	Aver-	Total.	Aver-	em- ployés.	average earnings per em- ployé.
Boiler cleaner Bricklayer Bricklayer's helper Bundler Carpenters Catohers Catohers	168 168 168 168 168 168 168	\$1.00 3.50 2.25 (a) 3.00 (a) (a)	1 1 1 2 2 2	73 168 190 (a) 27 (a) (a)	73 168 190 (a) (a) (a) (a)	\$73 588 428 223 80 905 100	73 588 428 223 27 453 50	\$0. 43 1. 00 1. 13 (a) 0. 16 (a) (a)	\$168 568 378 (a) 496 (a)
Cinder wheelers	168 168 168	1.50 1.75 2.00	1 1	56 131 37	14 131 87	81 227 74	20 227 74	0. 33 0. 78 0. 23	243 291 336
Total	168	1. 70	6	224	37	382	64	1. 83	287
Coke wheeler	168 168	1.00 1.75	1	142 137	142 137	142 248	142 248	0. 85 0. 82	168 304
Drag-downs	168 168	2. 25 2. 50	4 2	. 168 130	42 65	378 323	95 163	1.00 0.77	37R 420
Total	168	2. 36	6	298	. 50	703	117	1.77	396
Drag-down and heater	168	2.61	1	59	50	154	154	0. 35	439
Drag-outs	168 168 168	1.50 1.75 1.90	1 3 8	83 205 616	83 68 77	132 309 1, 149	132 123 144	0. 49 1. 22 2. 67	267 302 318
Total	168	1. 82}	12	904	75	1, 650	138	5. 38	807
Engineer	168	1. 75	1	87	87	153	153	0. 52	295
Engineers, axle hammer	168 168 168	1. 50 2. 00 (a)	1 3 2	15 103 (a)	15 34 (a)	· 22 206 176	22 69 88	0.09 0.61 (a)	246 236 (a)
Total	168	(6)	6	(b)	(8)	404	67	(9)	(b)
Engineer, chief Engineer, shape hammer	168 168	4.00 3.00	1	106 163	166 163	649 502	649 502	0. 99 0. 97	657 517
Firemen	168 168 168 163	1. 534 1. 663 1. 834 2. 00	1 3 1 1	80 174 153 25	80 58 153 25	123 290 281 49	123 97 281 49	0.48 1.04 0.91 0.15	258 280 309 329
Total	163	1.72	6	432	72	743	124	2.58	289
Firemen, axle hammer	168 168 168 168	1. 664 1. 60 2. 15 (a)	1 5 1	138 95 40 (æ)	138 19 40 (a)	338 170 87 8	238 34 87 8	0. 82 0. 57 0. 24 (6)	290 301 365 (a)
Total	168	(b)	8	(8)	(b)	503	63	(6)	(b)
Firemen, boiler	168 168 168 168 168	1.50 1.75 1.86 2.00 2.35	1 1 2 1 1	171 57 127 24 168	171 -57 64 24 168	261 100 236 48 395	261 100 118 48 395	1. 02 0. 34 0. 76 0. 14 1. 00	256 295 312 336 395
Total	168	1.90	6	547	91	1, 040	173	8. 26	31.9

a Paid by the quantity. The daily rate of pay and days of work done cannot be given, b No total can be made for the reason shown in the preceeding footnote.

Continued.

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PART II.-TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. - Concluded.

	Work- ing	Actual daily earn- ings, or daily rate		otual co	ndition	for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the	Dearest to average	Dif- ferent	Days work	of lone.	Earni	nge.	Neces-	Conse- quent average	
,		daily corn- ings.	em- ploy- éa.	Total.	Aver-	Total.	ago.	ployés.	earnings per em- ployé.	
Roughers	168 168	\$1.57 (a)	1 6	14 (a)	14 (a)	\$22 989	\$22 165	0.08 (a)	\$264 (a)	
Total	168	(8)	7	(b)	(b)	1,011	144	(b)	(b)	
Scrap heaters	168 168 168	(a) (a) 8.03}	7 18 1	(a) (a) 164	(a) (a) 164	6, 496 2, 025 1, 318	928 156 1, 318	(a) (a) 0.98	(a) (a) 1,350	
Shape hammerman's helpers	168 168	2.00 2.25	1	17 6 147	178 147	365 334	365 334	1. 05 0. 88	348 383	
Total	168	2. 16	2	323	162	609	350	1.93	364	
Shearmen	168 168 168 168 168	1. 50 1. 661 1. 834 2. 00 2. 23	8 2 1 2 2	436 897 124 90 296	55 154 124 45 148	671 522 223 178 600	84 261 223 89 330	2, 60 1, 83 0, 74 0, 54 1, 76	259 286 302 332 375	
Total	168	1.80	15	1, 253	84	2, 254	150	7.47	302	
Stookers	168 168	1. 00 1. 25	2 2	91 174	4 6 87	91 209	46 105	0.54 1.04	168 202	
Total	168	1.18	4	265	.06	200	75	1. 58	196	
Swarf wheelers	168	. 75	8	38	13	28	9	0. 23	124	
Watchmen	168 168 168 168	1. 25 1. 60 1. 854 2. 00	1 1 1	192 5 118 29	192 5 118	234 8 219 78	234 8 219 78	1. 14 0. 03 0. 70 0. 23	205 208 312 236	
Total	168	1, 524					135			
The establishment		(b)	331	(8)	(6)	64, 872	196	·	(6)	

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Ashmen	155 155	\$1. 29 1 1. 25	2	108	54 8	\$140 10	\$70 10	0. 70 0. 05	\$201 194
Blacksmiths	155 155 155	2. 40 2. 45 8. 25	1 2 1	62 63 157	62 32 157	146 155 511	146 78 511	0.40 0.41 1.01	36: 38 50-
Total	155	2.88	4	282	71	812	203	1. 82	44
Placksmiths' helpers	155 155	1. 45 1. 69	3 2	394 249	131 125	571 401	190 201	2. 54 1. 61	22: 25:
Total	155	1.51	5	643	129	972	194	4.15	23
Boiler tenders	158 155 155	1.75 1.86 1.75	4 1 5	729 110 399	182 116 80	1, 280 216 694	220 216 139	4. 70 0. 75 2. 57	27: 28: 27:
Boilerman and painter Buggymen	155 155	2. 161 1. 57	1	12 182	12 22	26 207	26 35	9. 08 9. 83	33 24

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for the reason shown in the preceding footnets.

H. Ex. 265——25

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

Work-	daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had invous syment.
days in the period.	rate nearest to	Dif-	worle.	s of done.	Earn	ings.	Neces-	Conse-
	daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	average earnings per em- ployé.
155 155 155	\$1.834 1.634 1.50	1 1 1	6 112 179	6 112 179	\$11 183 269	\$11 183 269	0.04 0.72 1.15	\$284 253 233
155 155 155 155 155 155	2.00 2.20 2.25 2.50 4.00	. 1 1 1	154 154 75 91 158	154 77 75 91 158	313 338 169 227 632	313 169 169 227 632	0. 99 0. 99 0. 48 0. 59 1. 02	315 340 349 387 620
155	2. 65	6	632	105	1, 679	280	4.07	412
155 155 155 155	1, 50 1, 89 2, 00 2, 331	2 1 1 3	62 18 6 24	31 18 6 8	93 34 12 56	47 34 12 19	0.40 0.12 0.04 0.15	233 290 310 363
	1. 77± 2.00	7 2	110 76	16 38	195 152	28 76	0.71	275 310
. 155 155 155	1. 411 1. 80 2. 00	2 1 1	38 46 31	19 46 31	55 83 62	28 83 62	0.25 0.30 0.20	224 286 310
155	1.74	4	115	29	200	50	0.75	270
155 155 135 155	1. 61 1. 25 1. 26 1. 32 1. 33	1 14 2 2 2 1	72 150 66 25 3	72 11 33 13 3	116 188 83 33 4	116 13 42 17 4	0.46 0.97 0.43 0.16 0.02	256 196 195 205 207
155 185 155 153 155 155 155	1.40	4	64 236 62 185 174 68	32 59 62 93 44 68	81 306 86 259 260 108	41 77 86 130 65 108	0.41 1.52 0.40 1.10 1.12 0.44	196 201 213 217 232 246
. 155	1. 30%	14	789	56	1,100	79	5. 08	216
155	. 90	2	113	57	102	51	0.73	140
155 155 153 155	1.25 1.30 1.58 2.75	2 1 1	148 115 68 29	49 58 68 29	185 140 103 80	75 105	0.74	194 201 235 428
. 155	1.41	7	360	51	519	74	1,74	223
135 155			89 106	89 106	131 221	131 221		. 32
155			195	98	352	176	1. 25	280
155 155 155 155 155	.50 .60) .64 1.00 1.19 1.25 1.48	15 1 2 2 2 2 1	374 33 86 32 121 42 53	25 33 48 16 61 42 52	188 22 55 32 144 52 77	13 23 28 16 72 52 77	2. 41 0. 21 0. 55 0. 21 0. 78 0. 27 0. 34	78 108 90 155 184 192 232
155 155 155	1.30 1.75 2.00	2 2 5	108 191 232	54 96 66	141 335 649	71 168 130	0.70 1.23 2.14	202 272 303
	in the period. 1 155 1	mearest in the period. a rerage daily earn-ings. 155 \$1.83 1.55 1.63 1.55 1.63 1.55 1	in the period. In the to to average daily playeds. 155 1.83 1 1.55 1.63 1 1.55 1.63 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.50 1 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1.25 1.55 1.30 1 1.55 1.55 1.30 1.55 1.5	metre to to average daily enrolled average da	Days of work done. Days of work done. Days of work done.		Company Comp	Days of work done. Commonstrates District to period. Average carry car



PART IL-TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

	Work	Actual daily earn- ings, or daily	Δ	ctual co	ondition	n for peri	od.	works	ition if nen had inuous yment.
Occupation.	days in the period.	rate nearest	Dif- ferent	Day	s of done.	Earni	nge.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	sary em- ployés.	earnings per em- ployé.
Engineer and roller	155 155	\$2.00 2.87	1	2 155	2 155	\$4 450	\$4 450	0. 01 1. 00	\$310 450
Gasmakers	155 155	1.57 1.68	8 2	· 445	56 126	606 422	87 211	2.87 1.62	242 261
Total	155	1.60	10	696	70	1, 118	112	4.49	249
Gasmaker and hammerman. Gasmaker and heaters' helper. Gasmaker and laborer. Gateman. Hammer driver. Hammerman Hammerman and heaters' helper.	155 155 155 165 155 155 155	3. 03 2. 40½ 1. 38½ 1. 50 1. 60 5. 50 1. 45½	1 1 1 1 1 1 1 1 1 1	31 52 13 176 119 114 136	31 52 13 176 119 114 136	94 125 18 264 189 629 198	94 125 18 264 189 629 198	0. 20 0. 34 0. 08 1. 14 0. 77 0. 74 0. 88	470 373 215 233 246 853 226
Hammerman and laborer Hammermen's helpers	155 155	1.40	3	130 230	130	182 395	182 132	0.84 1.48	217 266
Hammermen's belpers and la- borers.	155 155	1.551 2.301	1	45 85	45 85	70 196	70 196	0. 29 0. 55	241 357
Total	155	2,045	2	130	65	266	133	0.84	317
Heaters	155 155 155 155 155 155 155	2, 55) 3, 17 3, 78) 3, 05 4, 09) 4, 47	1 1 1 3 5 4	36 125 47 06 252 98	36 125 47 32 50 25	92 396 178 379 1, 032 438	92 396 178 126 206 110	0. 23 0. 81 0. 30 0. 62 1. 63 0. 63	396 491 587 612 635 693
Total	155	3. 84	15	654	44	2, 515	168	4. 22	596
Heater and heaters' helper	155	2.48	1	56	56	139	139	0. 36	385
Heaters and laborers	155 155	1. 701 3. 851	1	128 63	128 63	218 243	218 243	0, 83 0, 41	264 598
Total	155	2.41}	2	191	96	461	231	1.24	374
Heaters' helpers	155 155 155 155	1. 374 1. 623 1. 97 2. 104	7 12 4 2	48 563 104 75	7 47 26 38	916 205 158	9 76 51 79	0. 31 3. 63 0. 67 0. 48	213 252 306 327
Total	155	1. 70}	25	790	32	1,345	54	5.09	264
Heaters' helpers and laborers . Heaters' helper and scrap- pers' helper.	155 155	1.51	2	63 37	32 37	95 41	48 41	0. 41 0. 24	234 172
Hookers	155 155 155 155	1.00 1.37½ 1.63 2.00	1 2 8 2	2 8 240 4	2 4 30 2	2 11 391 8	2 6 49 4	0, 01 0, 05 1, 55 0, 03	155 213 253 310
Total	155	1,62	13	254	20	412	32	1.64	251
Hookers and laborers	155 155	1.43 2.30	1	37 50	19 50	53 115	27 115	0.24 0.32	222 357
Hookers-in	155 155	1.401	1	27 71	27 71	38 132	38 132	0.17 0.46	218 288
Total	155	1.43	- 2	98	49	170	85	0.63	_

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.-Mixed Iron and Steel: UNITED STATES-Continued.

4	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	d.	works	tion if nen had nuous yment.
Occupation.	days in the period.	rate nearcet to average	Dif- ferent	Days work	of done.	Earni	ngs.	Neces-	Consequent
		daily earn- ings.	ploy- és.	Total.	Aver- age.	Total	Aver-	sary em- ployés.	earnings per em- ployé.
Hookers-out	155 155	\$1.60 2.00	2 2	15 113	8 57	\$24 226	\$12 113	0.10 0.73	\$248 310
Total	155	1.95	4	128	32	250	63	0.83	303
Hooker-up	155 155 155 155 155 155	1. 444 1. 664 1. 46 1. 914 1. 664	1 1 1 1	45 18 24 72 105	45 18 24 72 105	65 30 35 138 175	63 30 35 138 175	0. 29 0. 12 0. 15 0. 46 0. 68	224 258 226 297 258
Laborers	155 155 155 155 155 155	1.00 1.25 1.30 1.375 1.50	9 3 81 16 6 4	133 50 1, 449 457 397 146	15 17 18 29 66 37	99 52 1, 81 t 589 546 216	11 17 22 37 91 54	0. 86 0. 32 9. 35 2. 95 2. 56 0. 94	115 161 194 200 213 229
Total	155	1.26	119	2, 632	22	3, 313	28	16.98	195
Laborer and moulder Laborer and pipe fitter Laborer and rougher-down Laborer and stocker Laborer and straightener Lay-overs Lay-overs Lay-over and puncher	155 155 155 155	1. 46 1. 52 2. 234 1. 28 1. 974 1. 38 . 84	1 1 1 1 1 5 1	59 50 17 32 39 221 38	59 50 17 32 39 44 38	36 76 38 41 77 305 32	86 76 38 41 77 61 32	0. 38 0. 32 0. 11 0. 21 0. 25 1. 43 0. 25	226 236 344 199 306 214 131
Machinists	155 156 155 155 155 155 155	1, 25 1, 75 2, 00 2, 20 2, 25 2, 45 3, 00	1 1 3 2 1 4	153 21 338 221 104 523 154	153 21 173 111 104 131 154	191 36 677 486 234 1, 280 455	191 36 226 243 234 320 455	0. 99 0. 14 2. 18 1. 43 0. 67 3. 37 0. 99	193 266 310 341 349 379 458
Total	155	2.22	13	1, 514	116	3, 359	258	9.77	344
Machinist and puncher Machinists' helpers	155 155	2,70 .75	1 2	131 144	131 72	354 109	354 55	0. 85 0. 93	419 117
Masons	155 155	3.15 4.00	2	13 10	7 10	41 40	21 40	0.08	489 620
Total	155	3, 52	3	23	8	81	27	0.14	546
Masons' helpers	155 155	1.50 1.62	2	209 137	105 137	314 222	157 222	1.35 0.88	233 251
Total	155	1.55	3	346	115	536	179	2, 23	240
Mauler and puncher	155 153	1.423 2.25	1 2	40 215	40 108	57 483	57 242	0, 26	221 348
Oil-room hands	155 155	1. 37± 2. 00	1	99 159	99 159	136 318	136 318	0. 64 1, 03	213 310
Total	155	1.76	2	258	129	454	227	1. 67	273
Patternmakers	155 155	1. 25 3. 50	1	59 156	59 156	73 546	73 546	0.38	192 543
Total	155	2.88	2	215	108	619	310	1.39	446
Pipe fitter	155 155	1,50 1,50	1 7	· 157	157 83	229 860	229 123	1.01 3.74	226 230



TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United STATES—Continued.

	Work-	Actual daily earn-ings,or daily	4	ctual co	adition	or perio	od.	work	ition if nen had nuous yment.
Occupation.	days in the period.	Inte Deurest to Average	Dif- ferent	Day:	of lone.	Zern	nge.	Neces-	Conse- quent average
-		daily carn- ings.	ploy- 64.	Total.	age.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Punchers	155 155	\$0. 75 . 874	2	21 50	11 50	\$16	\$8 44	0. 14 0. 32	\$118 136
	155	1.00	8	257	32	44 264	1 83	1.66	159
)	155 155	1.25 1.334	10 1	163	16 9	200 12	20 12	1. 05 0. 06	190
	155	1.70	1	100	100	170	170	0. 65	264
Total	155	1.17	22	600	20	706	81	3. 88	182
Puncher and straightener	155	1. 73	1	48	48	23	63	0.31	268
Roll turners	155 155	2 45 4.00	1	70 159	70 159	172 636	172 636	0.45 1.03	881 620
Total	155	8. 52}	2	220	115	808	404	1.48	547
Rollers	155	4. 23	3	91	46	285	193	0.59	656
	155 155	0.86	1	63 71	63 71	281 487	281 487	0.41 0.46	691 1, 063
•	155 155	7. 834 7. 47	1	77	73 77	537 575	537 575	0.47 0.50	1, 140 1, 157
Total	155	6.04	6	875	63	2, 265	378	2. 43	936
Rollers' helpers	156 155	2.17 2.66	2	93 36	47 88	202 101	101 101	0. 60 0. 25	837 412
Total	155	2. 31 }	3	131	44	303	101	0.85	259
Rollers' helpers and roughers.	155	2, 40}	2	118	50	284	142	0.76	373
Roughers	155	1.50	1	4	4			0.03	233
	155 155	2. 20 j 2. 40	4	155 210	39 53	342 504	86 126	1.00 1.35	313
	155 155	2, 70 2, 934	8	167 47	56 47	451 138	150 138	1. 08 0. 30	419 435
Total	155	2.47	13	583	45	1, 441	111	2.76	883
Rougher and rougher-down Roughers and stickers-in	155 155	1. 97 1. 81	1 2	68 73	68 37	134 132	134 66	0.44 0.47	305 280
Roughers-down	155 153	2. 52 3. 023	1 2	27 183	27 67	68 402	68 201	0. 17 0. 96	290 468
Total	155	2. 93	3	160	52	470	157	1.03	455
Roughers-up	155 156 155	1. 93 2. 52 3. 004	2 8 1	87 112 21	44 87 21	168 282 65	34 94 65	0.56 0.72 0.14	290 890 460
Total	155	2.34	6	220	87	515	86	1. 42	363
Rougher-up and straightener . Runner	156 155	1. 65½ 2, 50	1	81 152	81 152	134 879	134 879	0. 52 0. 98	256 386
Scrap pilers	155 155	1.00	1	9 87	9 87	9	9 190	0. 06 0. 56	155 239
Total	155	2.07	2		48	199	100	0.62	221
Scrap piler and scrapper	155	2.01	1	120	120	241	241	0.77	311
Scrappers	155	3. 18	1	33	23	105	105	0. 21	493
	155	3. 61	1	31	81	112	112	0.20	560

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

111	Work	Actual daily sarn- ings, or daily		etual co	ondition	for peri	od.	works	ition if nen bad inuous syment.
Occupation.	days in the period.		Dif- ferent	Days work	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	average earnings per em- ployé.
Scrapper and scrappers' help- ers.	155	\$1.863	1	26	26	\$48	\$48	0.17	\$286
Scrappers' helpers	155 155	1.00 1.55	1 3	13	1	4 20	4 7	0. 03 0. 08	155 238
Total	155	1.41	4	17	4	24	. 6	* 0.11	219
Shipper	155 155 155 155	3. 45 1. 663 1. 37 . 84	1 1 5 2	155 14 199 25	155 14 40 13	540 23 273 21	540 23 53 11	1. 00 0. 09 1. 28 0. 16	540 253 213 130
Stickers in	155 155 155 155	1. 22 1. 343 1. 645 1. 845	5 8 2 1	68 294 42 58	14 37 21 58	83 396 69 107	17 50 35 107	0.44 1.90 0.27 0.37	189 209 255 280
Tetal	155	1.42	16	462	29	655	41	2.98	220
Stockers	155 155 155 155 155 155 155 155	.50 .90 1.00 1.25 1.35 1.373 1.023	1 3 5 2 3 1	26 122 42 158 95 55 95 68	26 41 14 32 48 18 95 58	14 110 42 198 127 75 154 100	14 37 14 40 64 25 154 100	0. 17 0. 79 0. 27 1. 02 0. 61 0. 25 0. 61 0. 37	83 140 153 194 207 211 251 207
Total	155	1, 26	19	651	34	820	43	4.19	195
Stocker, boss	155	2, 50	1	100	100	250	250	0. C5	. 388
Stokers	155 155	1.25	10 3	351 249	35 83	442 339	113	2, 26 1, 61	193 211
Total	155	1.30	13	600	46	781	60	3. 87	202
Straighteners	155 153 153	1.33 1.43 1.80}	9 3 2	253 132 51	28 44 26	345 189 92	38 63 46	1. 63 0. 85 0. 33	211 222 280
Total	153	1. 421	14	436	31	626	45	2. 81	223
Straightener and water boy Timekeeper Timekeeper and yardmaster	155 155 153	1. 605 2. 405 2. 325	1 1 1	33 27 153	33 27 155	53 65 360	53 65 360	0. 21 0. 17 1. 00	249 373 360
Water boys	155 155	. 50 1. 25	1 4	53 57	53 14	28 71	28 18	0.34 0.37	82 193
Total	155	.90	5	110	22	99	20	0.71	140
Water gate man	155	.73	1	23	23	17	17	0.15	115
Weighmen	155 155 155	1.00 1.25 1.74	î 2	15 16 310	8 16 155	15 20 540	20 270	0, 10 0, 10 2, 00	155 194 270
Total	155	1.68	5	341	68	575	115	2.20	261
The establishment		1.86	554	24, 611	44	45, 860	83	158.78	289

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -.

[No statement of cost of production for mixed iron and steel is shown in Part L]

	Work-	Actual daily earn- ings, or daily		ctual o	adition	n for peri	od.	works	ition if nen had inuous orment.
Occupation.	days in the period.	PAGLED	Dif.	Day work	s of done.	Earn	ings.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- ća.	Total	Aver- age.	Total.	Aver-	ployés.	per em- ployé.
Acidman	313 313 313	\$1, 50 (a)	1 2	292 (a)	292 (a)	\$438 165	\$438 21	0.98 (a)	\$470 (a)
era. Back tongsmen	813	(a) (a)	(b)	(a) (a)	(a) (s)	3, 536 3, 139	(b) 1, 046	(a) (a)	(a) (s)
Blacksmiths	313	2.75	1	810	810	850	850	0.99	858
Madel	313	8.40		818	818	1, 081	1,081	1.03	1, 064
Total Blacksmiths' helpers	313 313	8. 07 <u>1</u> 1. 40	3	628 207	207	1, 981 294	966	2. 01 0. 66	962 445
•	813	1.50	i	814	314	483	482	1.00	480
Total	813	1.49	3	521	261	776	388	1.66	466
Boilermaker	313 313 313	(a) 1.75 1.75	1 1	(4) 309 302	(a) 309 302	414 559 515	414 559 515	(a) 0.99 0.96	(a) 566 534
Bricklayers	313 313 313	8, 25 8, 50 4, 83	4 2 1	287 326 12	73 163 12	935 1, 134 58	234 567 58	0. 92 1. 04 0. 04	1, 020 1, 08 9 1, 513
Total	318	8. 40}	7	625	89	2, 127	804	2,00	1, 965
Bricklayers' helpers	313	1.40	2	235	168	472	236	1.07	441
Buggy-offs	318 818	1. 50 (a)	2	293 (a)	98 (a)	439 1, 014	146 507	0.94 (a)	(a)
Total	313	(e)	5	(e)	(c)	1, 458	291	(6)	(c)
Bundlers	813 818	1.50 1.75	2	61 620	910 91	92 1, 000	92 540	0.19 1.96	472 545
Total	313	1.72	3	681.	227	1, 172	891	2.17	539
Carpenters	313 313	1.50 1.75	1	58 9	58 9	90 16	90 16	0. 19 0. 02	486 556
	313 313	2. 00 2. 25	3	340 269	113 289	649 650	216 650	1.00 0.92	597 704
Total	318	2.02	6	606	116	1, 405	234	2.23	632
Catchers	313 313	1. 45 1. 50	1	264 12	264 12	386 18	386 18	0.84	458 470
	813 813	1.55	1 3	268 727	12 268 242	419 1, 308	419 436	0. 56 2. 32	4F9 563
	813 813	2.00 (a)	1 2	(a)	22 (a)	43 1, 928	43 964	0.07 (a)	612 (a)
Total	313	(c)	9	(e)	(e)	4, 102	456	(e)	(c)
Cinder boys	313 313	.75 1.50	5	595 236	110 236	447 854	254	1. 90 0. 75	235 470
Dippers	313 313 313	2, 25 2, 50 2, 80	1	1, 170 822 297	298 822 297	2, 615 787 831	654 787 831	8.74 1.03 0.95	700 765 876
Total	813	2, 361	-	1, 789	296	4, 283	706	5.73	741

<sup>a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b Number of employée not given.
No total can be made for the reason shown in footnote a.</sup>

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. O.-Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. —, —Concluded.

٠,	Work	Actual daily cara- ings, or daily	4	Actual co	adition	for peri	od.	works	ition if nen had innous syment.
Occupation.	daye in the period.	nearest to	Dif-	Days week		Earn	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy.	Total	Aver-	Total.	Aver-	em- ployés.	per em- ployé.
Surapper and scrappers' help- ers.	155	\$1.84	1	26	26	\$48	\$48	0.17	\$200
Serappers' helpers	155 155	1.00 1.55	1 8	13	4	4 20	4 7	0.03 0.08	155 236
Total	155	1.41	4	17	4	24	. 6	0.11	219
Shipper: Shipper's helper Shevellers Stampers	155 155 155 155	8,45 1, 661 1,37 ,84	1 1 5 2	155 14 190 25	155 14 40 13	540 23 278 21	540 23 55 11	1.00 0.09 1.28 0.16	840 283 213 134
Stickers-in	155 125 155 155	1.22 1.34 1.64 1.84	5 8 2 1	68 294 42 58	14 87 21 58	83 396 69 107	17 50 35 107	0.44 1.90 0.27 0.87	186 200 255 286
Total	156	1.43	16	463	29	655	41	2.98	220
Stockers	155 156 156 155 153 155 155 155	.50 .90 1.00 1.25 1.35 1.37 1.62	1 3 5 2 8 1	26 123 42 158 95 55 95 58	26 41 14 82 48 18 95 58	14 110 42 198 127 75 154	37 14 40 64 25 154	0. 17 0. 70 0. 27 1. 02 0. 61 0. 35 0. 61 0. 37	207 251 251 251 251 251
Total	155	1. 26	19	651	84	820	43	. £ 19	196
Stocker, boss	155	2. 50	1	100	100	250	250	0. C5	286
Stokers	155 156	1. 25 1. 37)	10 3	351 249	35 83	442 339	44 113	2. 26 1. 61	193 211
Total	155	1. 30	13	600	46	781	60	3. 87	202
Straightoners	155 155 155	1. 33 1. 43 1. 80½	9 3 2	253 132 51	28 44 26	345 189 92	38 63 46	1. 63 0. 85 0. 33	211 222 280
Total	153	1. 43	14	436	31	626	45	2. 81	223
Straightener and water bey Timekeeper Timekeeper and yardmaster	155 156 153	1. 604 2. 404 2. 324	1 1 1	33 27 153	27 155	53 65 360	53 65 360	0. 21 0. 17 1. 00	249 373 360
Water boys	155 155	. 50 1. 25	1 4	53 57	53 14	28 71	28 18	0. 34 0. 37	81 193
Total	155	. 90	5	110	22	99	20	0. 71	140
Water-gate man	155	.75	1	23	23	17	17	0. 15	115
Weighmen	155 155 155	1.00 1.25 1.74	1 2	15 16 310	16 155	15 20 540	20 270	0. 10 0. 10 2. 00	159 194 270
Total	155	1.68	5	841	68	575	115	2. 20	261
The establishment		1.86	554	24, 611	44	45, 860	83	158.78	280

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -.

[No statement of cost of production for mixed iron and steel is shown in Part L]

	Work-	Actual daily earn- ings, or daily		Letnal o	ondition	a for peri	od.	works	ition if nen had inuons orment.
Occupation.	days in the period.	rate Degrees to Average	Dif.	Day work	s of done.	Earn	ings.	Neces-	Consequent
		daily earn- ings.	em- ploy- 6a.	Total	Aver-	Total.	Aver-	sary em- ployés.	earnings per em- ployé.
Acidman	313 313 313	\$1.50 (a) (a)	(b) 2	292 (a) (a)	292 (a) (a)	\$438 165 3, 536	\$438 21 (b)	0.93 (a) (a)	\$47 0 (a) (a)
Back tongsmen	813	(a)	8	(a)	(6)	8, 139	1, 046	(a)	(6)
Blacksmiths	813 313	2.75 8.40	1	310 318	310 318	850 1, 081	850 1, 081	0.99 1.03	858 1, 064
Total	313	2.07	3	628	314	1, 931	966	2.01	962
Blacksmiths' helpers	813 813	1. 40 1. 50	1	207 814	207 314	294 483	294 482	0. 66 1. 00	445 480
Total	818	1.49	3	521	261	776	388	1.66	166
Boilermaker	313 313 313	(a) 1.75 1.75	1 1 1	(a) 309 302	(a) 309 302	414 559 515	414 559 515	(a) 0.99 0.96	(a) 566 534
Bricklayers	313 313 313	8, 25 8, 50 4, 83	4 2 1	287 826 12	72 163 12	935 1, 134 58	224 567 58	0. 92 1. 04 0. 04	1, 020 1, 08 9 1, 513
Total	313	8. 40è	7	625	89	2, 127	304	2.00	1, 065
Bricklayers' helpers	313	1.40	2	235	168	472	236	1.07	441
Buggy-offs	813 818	1. 50 (a)	8 2	293 (a)	98 (a)	439 1, 014	148 507	0. 94 (a)	469 (a)
Total	813	(c)	5	(c)	(c)	1, 458	291	(e)	(c)
Bundlers	813 813	1. 50 1. 75	1 2	61 620	61 310	92 1, 000	92 540	0.19 L.96	472 545
Total	313	1.72	8	681.	227	1, 172	891	2.17	539
Carpenters	313 313 313 313	1.50 1.75 2.00 2.25	1 1 8 1	58 9 340 289	58 9 113 289	90 16 649 650	90 16 216 650	0. 19 0. 02 1. 00 0. 92	486 556 597 704
Total	313	2.02	6	606	116	1, 405	234	2.23	623
Catchers	313 313 313 313 313 313	1. 45 1. 50 1. 55 1. 80 2. 00 (a)	1 1 1 3 1 2	264 12 268 727 22 (a)	264 12 268 242 23 (a)	386 18 419 1, 308 43 1, 928	286 18 419 436 43 964	0. 84 0. 04 0. 86 2. 32 0. 07 (a)	458 470 4+9 563 612 (a)
Total	313	(e)		(e)	(e)	4, 102	456	(e)	(c)
Cinder boys	813 813	. 75 1. 50	5	595 236	119 236	447 864	P9 254	1. 90 0. 75	235 470
Dippers	313 313 313	2, 25 2, 50 2, 80	1 1	1, 170 822 297	298 322 297	2, 615 787 831	654 787 831	8,74 1.03 0.95	700 765 876
Total	813	2, 36	-6	1, 789	296	4, 283	706	5. 73	741

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b Number of employee not given.
c No total can be made for the reason shown in footnote a.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United STATES—Continued.

	Work-	daily		ctual co	ondition	for peri	od.	works	ition if nen had innous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	s of done.	Earni	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.
Dipper and laborer	313	\$1.04	1	283	283	\$550	\$550	0, 90	\$608
Doublers	313 313 313 313	1.50 1.60 1.75 1.85	1 2 14 1	325 586 1, 992 306	325 293 142 308	487 937 3, 498 570	487 469 250 570	1. 04 1. 87 6. 36 0. 98	469 500 550 579
Total	313	1.71	18	3, 211	178	5, 492	305	10.25	535
Doubler, sheet	313 313	.95 (a)	1	33 (a)	33 (a)	31 16	31 16	0.11 (a)	294 (a)
Engineers	313 313 313 313 313	1.60 2.00 2.25 2.30 2.50	1 1 1 3	320 1, 180 253 34 1, 001	320 295 253 34 334	512 2, 361 569 78 2, 503	512 500 569 78 834	1. 02 3. 77 0. 81 0. 11 3. 20	501 626 704 718 783
Total	313	2.16	10	2, 788	279	6, 023	602	8. 91	676
Engineer, chief	313	4. 25	1	318	318	1, 337	1, 337	1.02	1, 316
Foremen	313 313	2.92§ 4.50	1	313 137	313 137	915 617	915 617	1.00 0.44	915 1, 410
Total	313	3. 401	2	450	225	1,532	766	1.44	1,066
Foreman, laborers	313	2.25	1	318	318	716	716	1.02	705
Hammer drivers	313 313	1.65 (4)	3	589 (a)	295 (a)	971 1, 835	486 612	1.88 (a)	516 (a)
Total	313	(b)	5	(b)	(6)	2, 806	561	(6)	(8)
Hammermen	313	(a)	4	(a)	(a)	4, 414	1, 104	(a)	(a)
Heaters	313 313 313 313 313	1.60 1.75 1.85 2.00 (a)	1 1 4 10 8	291 308 1, 139 2, 411 (a)	201 308 285 241 (a)	466 538 2, 108 4, 821 11, 605	466 538 527 482 1,451	0. 93 0. 98 3. 64 7. 70 (4)	501 547 579 626 (a)
Total	313	(b)	24	(6)	(b)	19, 538	814	(b)	(6)
Heaters' helpers	313	(a)	9	(a)	(a)	4, 348	483	(a)	(a)
Hookers-up	313 313	1.35 (a)	1 2	62 (a)	62 (a)	84 1, 947	84 974	0, 20 (a)	(a) 421
Total	313	(6)	3	(6)	(b)	2, 031	677	(b)	(b)
Laborers	313 313 313 313 313 313 313 313 313 313	1. 00 1. 25 1. 35 1. 40 1. 45 1. 50 1. 55 1. 60 1. 70 1. 85 2. 00 2. 25	2 218 14 22 38 2 9 1 1 2 13	524 62 10, 015 996 3, 014 4, 291 75 1, 579 85 75 555 31	131 31 46 71 137 113 38 175 85 38 43	525 79 13, 542 1, 386 4, 363 6, 423 115 2, 566 144 139 1, 106	131 40 62 99 198 169 58 285 144 70 85	1. 67 0. 20 32. 60 3. 18 9. 63 13. 71 0. 24 5. 04 0. 27 0. 24	314 399 423 436 453 469 480 509 530 580 624 607

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
No total can be made for the reason shown in the preceding feetnets.

TABLE XII. -ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

O .- Mixed Iron and Steel: UNITED STATES-Continued.

	Work-	Actual daily earn- ings, or daily		otual co	ndition	ı for perio	od.	works	ition if nen had nuous yment
Occupation	days in the period.	PAGLISTO	Dif- ferent	Day work		Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	A ver-	Total.	Average.	em- ployés.	per em- ployé.
Laborers—concluded	313 313 813	\$2, 66 <u>1</u> (a) (a)	1 24 (b)	(a) (a)	(a) (a)	\$8 4, 468 1, 486	\$8 186 (b)	0. 01 (a) (a)	\$835 (a) (a)
Total	313	(c)	(c)	(c)	(e)	36, 419	(c)	(0)	(c)
LadlemenLever boysLevermen	313 313 313	(a) 1.50 (a)	7 2 6	(a) 563 (a)	(a) 281 (a)	1, 709 800 6, 262	244 400 1, 044	(a) 1.80 (a)	(a) 446 (a)
Machinists	313 313	3. 00 (a)	1	229 (a)	229 (a)	686 15	686 15	0.73 (4)	938 (a)
Total	313	(c)	2	(c)	(c)	701	361	(e)	(c)
Machinists' helpers	313 313	1.45 1.50	2	625 311	313 313	910 466	456 466	2. 00 0. 99	456 4 60
Total	313	1.47	3	936	312	1, 376	450	2.99	460
Mason	813	1. 35	1	127	127	171	171	0.41	421
Matchers	313 313 318	1. 50 1. 75 1. 85	1 6 5	18 1, 201 1, 197	18 200 230	26 2, 107 2, 211	26 351 442	0. 06 8. 84 3. 82	452 549 578
Total	813	1. 80	12	2, 416	201	4, 344	362	7. 72	563
Melters	313 313 313	(a) (a) 4.50	11 1	(a) (a) 187	(a) (a) 137	3, 497 5, 024 617	874 457 617	(a) (a) 0.44	(a) (a) 1,410
Millwrights, assistant	313 313	1. 65 1. 75	1 1	328 316	328 316	554 553	554 553	1.05 1.01	529 548
Total	313	1. 72	2	644 -	822	1, 107	554	2.06	528
Office boys	813 818	.41½ 1.50	2	312 833	156 333	181 489	66 489	1.00 1.06	131 460
Picklers	313 313 313	1. 50 1. 75 2. 00	1 2 1	404 785 409	404 393 409	006 1, 363 810	606 682 810	1. 29 2. 51 1. 31	470 543 620
Total	313	1. 74	4	1, 598	400	2, 779	695	5.11	544
Picklers' helpers	313 313	1. 50 1. 64	5 1	1, 243 408	249 408	1, 889 669	378 669	8. 97 1. 30	476 513
Total	313	1. 55	6	1, 651	275	2, 558	426	5, 27	485
Pipe line boss	318	2.50	1	181	131	825	325	0. 42	777
Pitmen	313 313	1.35 (a)	1 8	283 (a)	283 (a)	36 3 2, 66 1	382 333	9. 90 (a)	422 (a)
Total	318	(c)	9	(0)	(e)	8, 048	333	(c)	(e)
Puddlers	313 313 313 313	(a) (a) . 75 4. 87	18 18 5 1	(a) (a) 650 318	(a) (a) 130 318	15, 403 9, 560 487 1, 548	856 533 97 1, 548	(a) (a) 2.08 1.02	(a) (a) 235 1, 524

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b Number of employes not given.
c No total can be made for reasons shown in the preceding footnotes.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O .- Mixed Iron and Steel: UNITED STATES-Continued.

ESTABLISHMENT No. -, -Concluded.

	Work-	Actual daily corre- ings, or daily	4	Letzal or	nditio	n for peri	od.	Cond works cont omple	ition if non had innous yment,
Occupation.	ing days in the period.	Page Description to	Di.	Day:	of lone.	Earni	ngs.	Neces	Couse-
		1111	掠	Total.	TASE-	Total	ato. Tata	ployés.	average carnings per cu- ploys.
Bollers'	313 313	\$2.36) 2.30	114	279 280 (a)	279 280 (a)	\$632 1, 610 6, 780	\$633 1,610 1,607	0. 90 0. 92 (e)	\$700 1,004 (a)
Total	313	(6)	•	(4)	(0)	6,431	1, 405	(b)	(è)
Rollers and crows	313	(e) (e)	*	(e) (e)	(a) (a)	76, 781 1, 221	1,290 G11	(e) (e)	(a) (a)
Scrap boys	313 313 313	.00 27. 28.	1 1 1 10	304 11 290 1,779	150 11 250 178	173 8 297 1,000	87 8 287 190	6.5	178 228 236 236
Total	313	.80	14	2,364	170	2, 106	151	1.02	271
Sheermen and sheermen's	313	(2)	12	₩.	(43)	4,200		(e)	i (61
holpers. Short feermen	373 313 313	783	:	48	H ()	1,200 1,200 700	1,65 1,65 201	1.43	(4) (4)
Stechare	313	1.00 1.00	14 1	1, 357 213	100 213	2, 570 307	253 887	1.53	474 595
Tetal	373	1.52	13	2,679	13	4.67	23	1.3	ea ea
Storekorper	373	LIS	1	296	35	. 436	. 4		454
\$ 1449413	3;3 3;3 3;3	1.35	, 3	547 596 313	274 286 274	135 440 461	=	2 M	61 61
Tatai	313	Le	•	1,254	290	1,63	**	1.00	CI
Teamsters	173 273 273	1.35 1.34 1.30	•	229 439 11	5	25 625 145	77 88	: M : M	<u>ح</u> ا ناد
Tru'	===	141	13	:30	e:	2.21	*	2.53	441
Timekeeper	E3	2.20	1	2 11	E:	Œ	C)		=
Тэгей нгышев	n n	1.45 1.70	4	7M 654	790 31.7	1 153 1 153	25.	2.3. 2.43	121
Trei	27.3	2.54	•	1.03	==	2 212	317	₽	67
₩akràmes	13	100000000000000000000000000000000000000	***************************************	XFN	RRNAN	1. 1.24 1. 1.24 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	577 374	12	478 स्रोह उटा
	121 121 122	134	1	200	***	44 43 461	44 43 43	1 H	5-7 5-76 746
Tatai		163		1,52	<u> </u>	7.70	- Kin	-::	E
क्रिक्ट अ हर	123	. 🕽	1	×	×	7	3	1 2	==
Waghmaner	_ ===	1 2	1	#23 #23	23. 24.	413 413	236		•71 •22
Tres	123	- 794	3	.8:	24	:, 300	3		P.
The medicine are			.6)	,b,		32, 177	6)	2)	

a Paul by the paracity. The duly man of pay and days of work done manus be given. It but total can be made for remove above in the processing feetbooms.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: UNITED STATES—Continued.

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Work-	daily earn- ings, or daily rate nearest	Δ	ctual co	ndition	for perio	od.	works	ition if nen had nuous syment.
days in the period.	nearest to	Dif- ferent	Days	of done.	Earni	ings.	Neces-	Conse- quent average
	daily earn- ings.	em- ploy- éa.	Total.	Aver- age.	Total.	Aver-	em-	earnings per em- ployé.
313 313	\$1.25 1.33§	2	14 9	7 9	\$18 12	\$9 12	0. 04 0. 03	\$400 417
313 313 313	2, 50 2, 70 3, 25	1 1 3	256 294 303	256 294 101	641 793 984	641 793 328	0.82 0.94 0.97	784 844 1,016
313	2. 835	5	853	171	2, 418	484	2. 73	887
313 313 313	1.50 2.25 1.60	2 1 1	565 8 312	283 8 312	848 18 500	424 18 500	1.81 0.03 1.00	470 704 501
313 313	1.56 2.054	1 2	205 356	205 178	320 731	320 366	0.65 1.14	489
313	1.87	3	561	187	1,051	350	1. 79	586
313 313 313	1. 25 1. 37 2. 50	5 1 1	1, 256 276 303	251 276 303	1, 569 380 759	314 380 759	4.01 0.88 0.97	391 431 78
313 313 313	1. 40) 1. 65 2. 19	4 2 2	539 237 491	135 119 246	805 391 1,076	202 196 538	1. 72 0. 76 1. 57	468 510 680
313	1, 79}	8	1, 267	158	2, 273	284	4. 05	563
313 313 313 313	1,485 1,365 1,366 1,46	1 1 1 2	161 80 206 403	161 80 206 202	239 109 281 588	239 109 281 294	0. 51 0. 26 0. 66 1. 29	460 420 427 457
313 313 313	1, 90 2, 324 2, 534	2 1 1	318 -141 252	159 141 252	604 328 639	302 328 639	1. 02 0. 45 0. 81	590 728 794
313	2. 21	4	711	178	1, 571	393	2.28	693
313 313 313	1.45 1.374 .578	. 8 4 1	648 213 313	81 53 313	939 293 180	117 73 180	2. 07 0. 68 1. 00	454 431 180
313 313	1.50 3.00	2	327 294	164 294	502 879	251 879	1.04 0.94	481 936
313	2. 224	3	621	207	1, 381	460	1.98	696
313	1.59 1.361 1.16 1.831 1.18	1 1 1 1 1	68 253 237 12 11	68 253 237 12 11	108 345 275 22 13	108 345 275 22 13	0. 22 0. 81 0. 76 0. 04 0. 04	497 427 363 574 376
313 313	1.96 2.15	1	24 287	24 287	47 617	47 617	0. 08 0. 92	613 673
313	2.13	. 2	žii	156	664	332	1.00	668
313	1.76}	2	312	156	551	276	1.00	533
313	1. 914 2. 25	4 2	1, 218 684	305 342	2, 334 1, 539	584 770	3. 89 2. 19	704
	ing days in the period. 313 313 313 313 313 313 313 313 313 3	ing days rate flat to period. Average daily flat to period. Average daily flat to flat flat flat flat flat flat flat flat	ing days rate large days and series of the period. As a series of the period and series of the period. As a series of the period.	In the period Payment In the period daily Page In the period Part In the period Part In the carest to period all all all all all all all all all al				

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued.

O.-Mixed Iron and Steel: UNITED STATES-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	a of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Engineer and laborer	313	\$1.45	1	11	11	\$16	\$16	0.04	\$455
Firemen	313 313	1.65 1.90	4 3	638	160 338	1, 059 1, 925	265 642	2.04 3.24	520 503
Total	313	1. 804	7	1, 651	236	2, 984	426	5. 28	566
Fireman and laborer	313	1.51	1	29	20	44	44	0.09	475
Foremen, laborers	313	1.50 1.624	1 2	170 308	179 154	269 500	269 250	0.57 0.98	470 508
Total	313	1.58	3	487	162	769	256	1.55	404
Foremen, mill	313 313	6. 13½ 7. 98½	1	313 313	313 313	1, 920 2, 500	1, 920 2, 500	1.00	1, 920 2, 500
Total	313	7.06	2	626	313	4, 420	2, 210	2,00	2, 210
Foreman, shear room		4.25 1.00	1 3	306 691	306 230	1,300 697	1, 300 232	0.98 2.21	1, 230 316
Heaters	313 313 313 313 313 313 313	3. 384 3. 782 4. 00 4. 303 4. 58 4. 774 4. 984	1	271 229 2 173 177 641 203	271 229 2 173 177 160 203	917 867 8 745 811 3, 061 1, 012	917 867 8 745 811 765 1,012	0.87 0.73 0.01 0.55 0.57 2.05 0.63	1, 059 1, 185 1, 252 1, 348 1, 434 1, 495 1, 560
Total	_	4. 37	_	1, 696	170	7, 421	742	5, 43	1,370
Heaters' helpers	1	1.724 1.994 2.15 2.36 2.91	4	355 429 844 183 536	89 215 211 183 179	612 856 1, 816 432 1, 560	153 428 454 432 530	1. 13 1. 37 2. 70 0. 58 1. 71	540 625 673 739 911
Total	313	2. 25	14	2, 347	168	5, 276	377	7.49	704
Heaters' helpers and laborers Hookers Hookers and straighteners Hookers in Hookers up Keeper up and lighter up	313	1.663 1.54 1.014 2.14 2.00 2.114	4	246 504 564 1, 047 970 313	123 168 141 209 243 313	409 776 573 2 240 1, 940 662	205 259 143 448 485 682	0.79 1.61 1.80 3.35 3.10 1.00	520 482 318 670 626 662
Laborers	313 313 313 313 313 313 313 313 313 313		3 2	949 927 11 7, 234 968 390 517 25 301 386 17	105 76 11 63 82 98 97 23 133 191 17	708 190 111 9.0% 1,304 34; 1,304 41 6% 673 47 95;	79 83 11 109 137 145 41 437 457 457	3.03 0.74 0.74 23.11 3.16 1.23 2.93 6.38 1.23 1.23 1.23	234 262 313 203 413 439 466 513 549 746 863
Total	813	1.334	137	11 412	73	:3, :54	1.00	37.74	415
Laborer and masses below Laborer and platemen Laborer and straightener Laborer and water tunder	313 313 313 313		. 3		3:4 3: 31 - 1 31 -		11 12 12	9. ; 9. 3. 9. 4. 9. 4.	67: 413 313 4.6

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. O.—Mixed Iron and Steel: United States—Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had inuous byment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work		Earn	ings.	Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	per em- ployé.
Lathemen	313 313	\$1.50 1.75	1	288 217	288 247	\$432 432	\$132 432	0.92 0.70	9170 547
Total	313	1. 611	2	535	268	864	432	1.71	503
Machinists	313 313 313 313 313 313	1. 87½ 2. 00 2. 25 2. 45 2. 50 2. 75	1 1 3 2 2 2	311 29 61 29 602 314	311 29 20 15 301 314	586 58 138 71 1,504 862	586 58 46 36 752 862	0, 99 0, 50 0, 19 0, 09 1, 92 1, 00	506 626 708 766 782 839
Total	313	2.39	10	1, 346	135	3, 219	322	4.28	749
Machinists' helpers	313 313 313	.50 1.00 1.16	3 1 1	289 242 292	96 242 292	151 252 338	50 252 338	0. 92 0. 77 0. 93	164 326 363
Total	313	.90	5	823	165	741	148	2, 62	282
Masons	313 313 313	3. 25 3. 80 4. 00	1 1 1	44 229 8	44 229 8	112 871 32	142 871 32	0. 14 0. 73 0. 03	1, 010 1, 190 1, 252
Total	313	3.72	3	281	94	1,045	348	0.90	1, 164
Masons' helper	313 313 313	1.50 3.20 2.00	1 1 1	65 215 209	65 215 209	98 701 419	98 701 419	0. 21 0. 69 0. 67	472 1, 021 627
Pipe fitters	313 313	1.75 3.104	2	28 309	14 309	50 960	25 960	0.09	559 972
Total	313	2. 901	3	337	112	1,010	337	1.08	938
Platemen Plateman and straightener Policemen Porter Pullers-out Pullers-out and rougher Pumpmen Rigger	313 313 313 313 313 313 313 313	1. 63 1. 18 1. 50 1. 48 1. 43 1. 77 1. 624 1. 695	26 1 7 1 9 1 2	3, 154 50 1, 085 356 1, 122 153 8	121 50 153 356 125 153 4 66	5, 191 59 1, 626 527 1, 603 271 13 112	200 59 232 527 178 271 7 112	10. 08 0. 16 3. 47 1. 14 3. 58 0. 49 0. 03 0. 21	515 369 469 463 447 554 500 531
Roll turners	313 313 313	2. 50 2. 60 4. 00	1 1 1	281 5 200	281 5 299	702 13 1, 196	702 13 1, 196	0, 90 0, 02 0, 96	782 814 1, 253
Total	313	3. 261	3	585	195	1, 911	637	1.88	1, 022
Rollers	313 313 313 313 313	4. 29§ 5. 00 5. 15 6. 25§ 6. 75	1 1 1 1 2	197 143 336 244 265	197 143 336 244 133	846 713 1, 730 1, 526 1, 790	846 713 1,730 1,526 895	0. 63 0. 46 1. 07 0. 78 0. 85	1, 344 1, 561 1, 612 1, 958 2, 114
Total	313	5. 571	6	1, 185	198	6, 605	1, 101	3.79	1, 745
Rollers' helpers	313	2. 804	2	511	256	1. 480	740	1. 63	907
Roughers	313 313	2.14½ 2.93	2	371 802	186 201	793 2, 349	398 587	2, 10 2, 56	671 917
Total	313	2.68	6	1, 173	196	3, 144	524	-	-

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

O.-Mixed Iron and Steel: UNITED STATES-Concluded.

ESTABLISHMENT No. - Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day:		Earn	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Roughers-down Roughers-up	313 313 313	\$2.85\\\2.48\\\.59	2 2 1	464 505 118	232 253 118	\$1,324 1,254 117	\$662 627 117	1.48 1.61 0.38	\$893 777 310
Shearmen	313 313 313	1.37½ 1.50 1.75	7 1 1	673 204 199	96 204 199	922 306 348	132 306 348	2. 15 0. 65 0. 64	429 470 547
Total	313	1.461	9	1,076	120	1,576	175	3.44	458
Shippers	313 313 313	1.80 2.11 2.91	1 1 1	15 312 309	15 312 309	27 659 900	27 659 900	0.05 1.00 0.99	563 661 912
Total	313	2, 491	3	636	212	1,586	529	2.04	781
Stampers	313	. 673	2	297	149	200	100	0, 95	211
Stockers	313 313	1, 25 1, 65	1	243 815	243 315	304 521	304 521	0.78 1.01	392 518
Total	313	1.48	2	558	279	825	413	1.79	463
Straighteners	313 313 313 313 313	.82½ .87 1.00 1.30 1.35	17 7 11 2 2	1, 821 425 365 212 196	107 61 23 106 98	1, 498 370 370 274 264	88 53 34 137 132	5. 82 1. 36 1. 17 0. 68 0. 63	257 272 317 405 422
Total	313	. 92	39	3, 019	77	2,776	71	9. 66	288
Sweepers	313 313 313	.75 1.08 1.25	1 2 1	16 83 243	16 42 243	12 90 306	12 45 306	0.05 0.27 0.78	235 339 394
Total	313	1. 19	4	342	86	408	102	1.10	373
Switchmen Timekeepers Water boys Water tenders. Wheelman	313 313 313	1,62± 2,50 1,25 1,62 1,58±	2 4 3 1	296 622 853 638 240	148 311 213 213 240	486 1,560 1,067 1,034 380	243 780 267 345 380	0.95 1.99 2.73 2.04 0.77	514 783 392 507 406
The establishment		1.92	461	58,578	127	112, 447	244	187. 28	601

P.-Mixed Iron and Steel CONTINENT OF EUROPE.

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Cinder loaders	77	\$0.51à	1	156 64	78 64	\$80 49	\$10 49	2. 03	\$39 50
Total	77	.581	3	220	73	129	43	2, 86	45
Dumpers	77	. 623 . 792	2 2	147 143	74 72	92 114	46 57	1. 91 1. 86	48 61
Foremen	77 77 77 77	. 69 . 73½ . 93 1. 23 1. 60	1 1 1 8 1	13 38 71 216 73	13 28 71 72 73	28 66 266 117	9 28 66 89 117	0, 17 0, 49 0, 92 2, 81 0, 95	53 57 72 95 123
Total	77	1.18	7	411	59	480	69	5. 34	91

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ned avd de in	**************************************	Different employ-6s.	Days work . Total. 72 71 145 287 160	Average. 72 71 73 72	Earni Total. \$56 41 56 182	Average. \$56	Neces- sary em- ployés.	per em- ployé.
d e ii	\$0.775 .58 .70 1.255 .97 1.665 .93	1 1 1 2 4 2 1 1	72 71 71 145 287	72 71 71 73	\$56 41 56	856 41 56	ployés.	earnings per em- ployé.
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	.58 .79 1.25½ .97 1.66½ .93 1.38	1 1 2 4 2	71 71 145 287	71 71 73	41 56	41 56		
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	.79 1.25½ .97 1.66½ .93 1.38	4 2	71 145 287	71 73	56	56	0.02	\$60
7 7 7	1. 66½ . 93 1. 38	2	7.0	72		91	0. 92 1. 88	44 61 97
7 7 7	. 93 1. 38	1	160		279	70	3,72	75
7	1.38	1		80	266	133	2.08	128
7	1.16		71 74	71 74	66 102	66 102	0.92 0.96	72 106
7		2	145	73	168	84	1.88	89
7 7	1.02	3	205	68	209	70	2.66	79
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	.66 .944 1.01 1.684	1 1 1 2	65 60 53 83	65 60 53 42	42 57 54 140	42 57 54 70	0, 84 0, 78 0, 69 1, 08	50 73 78 130
7	1. 121	5	261	52	293	59	3. 39	86
7	.32 .77}	3	199 90	66 90	64 70	21 70	2.58 1.17	25 60
7	. 465	4	289	72	134	34	3.75	36
7	. 42	2	91	46	38	19	1.18	32
7 7	.441 .721	1	18 68	18 68	8 49	8 49	0. 23 0. 88	34
7	. 661	2	86	43	57	29	1.11	51
7	. 58 . 801	6	424 68	71 68	245 55	41 55	5. 51 0. 88	44 62
7	. 61	7	492	70	300	43	6.39	47
7 7	.31 .701 .951 .381 1.08	1 3 1 1	69 153 75 74 651	69 51 75 74 59	21 106 71 29 702	21 36 71 29 64	0. 00 1. 99 0. 97 0. 96 8. 45	23 54 73 30 83
7	1.00	5 2	276 120	55 60	214 120	43 60	3. 58 1. 56	60
7	. 845	7	396	57	334	48	5.14	65
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	.56 .631 .721 .91 1.391	2 1 2 3 1	75 61 106 223 64	38 61 53 74 64	42 39 77 203 89	21 39 39 68 89	0.97 0.79 1.38 2.90 0.83	43 49 56 70 107
7	. 85	9	529	59	450	50	6, 87	66
7	. 631 . 85½	3 2	240 110	80 55	152 94	51 47	3. 12 1. 43	49 66
777777777777777777777777777777777777777		77 .31 777 .701 777 .951 777 .952 777 1.08 777 1.00 77 1.00 77 .561 777 .722 777 1.302 777 77 .31 1 777 .704 3 777 .704 3 777 .955 1 777 .382 1 777 1.08 11 777 1.00 2 777 .56 2 777 .56 2 777 .56 2 777 .727 2 777 .727 2 777 .91 3 77 1.395 1 777 .855 9 777 .855 2	77 .31 1 69 777 .704 8 153 777 .954 1 75 778 .955 1 75 777 1.08 11 651 77 .774 5 276 77 1.00 2 120 77 .844 7 396 77 .56 2 75 77 .634 1 75 77 .724 2 106 77 .724 2 106 77 .725 2 106 77 .725 2 106 77 .726 3 221 77 .727 2 106 77 .848 9 529 77 .851 3 240 77 .852 2 110	77 .31 1 69 69 777 .704 3 153 51 77 .954 1 75 75 77 .382 1 74 74 77 1.08 11 651 59 77 .772 5 276 55 77 1.00 2 120 60 77 .842 7 396 57 77 .56 2 75 38 77 .722 2 106 53 77 .725 2 106 53 77 1.394 1 64 77 .85 9 529 59 77 .834 3 240 80 77 .852 2 110 55	77	77 .31 1 69 69 21 21 777 .704 3 153 51 108 36 777 .954 1 75 75 75 71 71 777 .382 1 74 74 29 29 77 1.08 11 651 59 702 64 77 .772 5 276 55 214 43 77 1.00 2 120 60 120 60 77 .842 7 396 57 334 48 77 .56 2 75 38 42 21 77 .72 2 106 53 77 39 77 .72 2 106 53 77 39 77 .72 2 106 53 77 39 77 .91 3 223 74 203 68 77 1.392 1 64 64 89 89 77 .85 9 529 59 450 50 77 .634 3 240 80 152 51 77 .634 3 240 80 152 51 77 .634 3 240 80 152 51	77	



TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. - - Concluded.

	Work-	dauy	A	ctual co	ndition	for perio	od.	works	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work		Earnings.		Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	Average.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Shearmen's helper Watchman	77 77	\$0. 24 . 58	1	81 84	81 84	\$19 49	\$19 49	1. 05 1. 09	\$18 45
Weighmen	77 77 77	.50 .58 .033	1 1 4	73 69 327	73 69 82	36 40 207	36 40 52	0. 95 0. 90 4. 25	38 45 49
Total	77	. 603	6	469	78	283	47	6, 10	46
The establishment		. 83	92	5, 940	65	4, 933	54	77.14	64

ESTABLISHMENT No. -

[Ne statement of cost of production for mixe d iron and steel is shown in Part L]

Blacksmiths	313 313	\$0. 46 . 621	21 6	3, 152 1, 425	150 238	\$1, 452 880	\$69 148	10. 07 4. 55	\$144 195
Total	213	. 51	27	4, 577	170	2, 341	87	14.62	160
Boiler tenders	313 313	. 791 . 94	9	2, 685 314	298 314	2, 129 295	237 295	8, 58 1, 00	248 294
Total	313	. 81	10	2, 999	300	2, 424	242	9.58	253
Boilersmiths	313	.71 .575	1	G09 170	305 170	431 98	216 98	1.95 0.54	222 180
Bundlers	313 313 313	.321 .461 .681	6 2 1	993 540 294	166 270 294	324 250 202	54 125 202	3.17 1.73 0.94	102 145 215
Total	313	. 423	9	1,827	203	778	86	5, 84	133
Carpenters	313	. 51	7	1,025	146	521	74	3.27	150
Catchers	313 313 313	.48 .88 1.034	1 9 5	25 2,277 1,334	25 253 267	12 2,005 1,382	12 222 276	0. 08 7. 27 4. 26	150 276 324
Total	313	. 93)	15	3, 636	242	3, 399	227	11.61	293
Cinder loader Cinder wheelers Coal wheelers	313 313 313	. 198 . 489	1 7 12	238 2, 093 3, 009	238 200 251	46 1, 021 1, 325	46 146 110	0. 76 6. 69 9. 51	60 153 138
Drag-outs	313	. 54½ . 67½	22 13	4, S18 3, 401	210	2, 623 2, 301	119 177	15, 19 1 10, 87	170 212
Tetal	313	. 60	35	8,219	235	4, 924	141	26. 26	188
Driver	313	. 54	1	139	139	75	75	0.44	169
Engineers	313 313	. 78). 1. 00	Į	2, 135 614	305	1, 671 604	239 202	6. 83 1. 93	245 313
Total	313	- 	•	2,739	304	2, 27,3	:33	8.75	300
Faguerr, mechanical. Enguerr, mechanical, assist-	313	13	1	313 313	313 313	1. 023 378	1, 6 39 376	1. 80 1. 80	1, 639 378
F.miscern.	3:3 -	.43 :	S	1,43	286	61;	123 .	4.36	135

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued. ESTABLISHMENT No. —Continued.

Occupation.	Work-	Actual daily earus ings. or daily	A	otual o	works	ition if nen had inuous syment.			
	days in the period.	nearest	Dif- ferent em- ploy- és.	Days of work done.		Earnings.		Neces-	Conse- quent
				Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Foreman, laborers Foreman, masons	313 313 313	\$2.393 .96 2.21	1 1 1	313 343 313	313 343 313	\$750 329 692	\$750 329 692	1.00 1.10 1.00	\$750 300 692
Foremen, puddlers	313 313	1. 461 1. 691	1	313 313	313 313	458 530	458 530	1.00 1.00	458 530
Total	313	1.58	2	626	313	988	494	2.00	494
Foremen, rollers	313 313 313	1. 42 1. 81 2. 18	1 1 1	313 313 313	313 313 313	444 566 683	444 566 683	1.00 1.00 1.00	444 566 683
Total	313	1. 80	3	939	313	1, 693	564	3,00	564
Foreman, works Foreman, works, assistant Greaser Hammer tenders	313 313 313 313	4. 071 1. 824 . 725 . 854	1 1 1 6	313 313 274 1,840	313 313 274 307	1, 276 571 109 1, 575	1, 276 571 199 263	1.00 1.00 0.88 5.88	1, 276 571 227 268
Hammersmiths	313 313 313	.34 .884 1.17	1 3 7	252 404 1, 528	252 133 218	86 353 1, 791	86 118 256	0, 81 1, 28 4, 88	107 276 367
Total	313	1. 021	11	2, 180	198	2, 230	203	6, 97	320
Heaters	313 313 313	.71 .89 1.14	26 5 22	5, 800 1, 140 5, 368	223 228 244	4, 132 1, 012 6, 114	159 202 278	18. 53 3. 64 17. 15	223 278 350
Total	313	. 914	53	12, 308	232	11, 258	212	39.32	286
Heaters' helpers	313 313	.42 .354	8 103	1, 940 13, 440	243 131	810 4, 788	101 46	6. 20 42. 94	131 112
Hookers	313 313 313	. 49± . 69 . 92	7 8 1	1, 529 2, 078 279	218 260 279	758 1, 436 256	108 180 256	4.88 6.64 0.89	155 216 287
Total	313	. 63	16	3, 886	243	2, 450	153	12, 41	197
Hostler	313	.40	1	347	347	139	139	1.11	125
Iron breakers	313 313	.341	1	67 71	67 71	23 43	23 43	0. 21 0. 23	107
Total	313	. 48	2	138	69	66	83	0.44	150
Iron loaders	313	. 551	21	5, 747	274	3, 192	152	18,36	174
Iron wheelers	313 313	. 42±	10 5	1, 501 318	150 64	640 197	64 39	4.80 1.02	133 194
Total	313	.46	15	1, 819	121	837	56	5. 82	144
Joiners	313 313	. 56 . 831	1	310 322	310 322	174 269	174 269	0. 99 1. 03	176 261
Total	313	.70	2	632	316	443	222	2.02	219
Laborers	313 313 313	.26 .47 .69	51 28 1	8, 665 2, 303 61	170 82 61	2, 273 1, 085 42	45 39 42	27. 68 7. 36 0. 19	82 147 216

H. Ex. 265--26

TABLE XIL-ACTUAL AND THEORETICAL TIME AND BARNINGS-Continued. P.-Mixed from and Steel: CONTINUES OF EUROPE-Continued.

ESTABLISHMENT No. -. - Concluded.

Occupation.	Work-	Actual daily earn- ork. logs, or daily					od.	works	Condition if workmen had continuous employment.	
	ing days in the period	rate mearest to average daily earn- ings.	Dif.	Days of work done.		Earnings.		Neces-	Conse-	
			ploy-	Total.	Aver-	Total.	Aver-	ployés.	earnings per em- ployé.	
Laborer and puddler	313	\$0.46	1	284	284	\$122	\$132	0.95	\$145	
Locksmiths	313 313	.505 .905	11	1, 584 338	144 338	945 316	86 316	5.08 1.06	187 293	
Total	313	, 65 ₃	12	1,922	160	1, 261	105	6.14	205	
Masons	313 313 313 313	.56 .224 .604 .534	13 1 2	2, 119 2, 889 302 473	238 222 332 237	1, 199 657 201 254	133 51 291 127	6.83 9.23 1.06 1.51	175 71 189 168	
Puddlers	313 313 313 313 313 313 313 313	.475 .75 .81 .86 .94 .99 1,185 1,345	11 63 64 23 6 11 50 5	288 12, 186 10, 129 5, 625 1, 440 2, 553 11, 555 1, 272	35 193 230 245 240 232 231 254	183 9, 133 8, 235 4, 857 1, 351 2, 525 13, 769 1, 768	17 145 187 211 225 220 274 342	1. 24 28. 90 32. 39 17. 97 4. 60 8. 16 36. 92 4. 06	145 224 274 274 294 314 371 426	
Total	313	. 925	213	45, 158	212	41, 693	196	144.27	280	
Pumpuses	313	.46	5	1,267	253	585	117	4.05	145	
Rollers	313 313	.51 .77	10 15	2, 335 3, 525	234 235	1, 191 2, 718	119 181	T. 46 11. 26	160 241	
Total	313	. 66	25	5, 800	234	3,909	156	18.72	209	
Boughers	313 313 313 313	.52 .95 1.12 1.34	2 4 6 3	587 996 1, 698 817	290 242 283 272	290 945 1,901 1,093	145 236 317 364	1.79 2.18 5.42 2.61		
Total	313	1.04	15	4,071	271	4, 229	282	13.00	325	
Sawyers	313	.618	3	906	302	559	186	2.89	190	
Shearmen	313	.49	19	1.405 888	182 296	1, 899 517	89 172	11.07 2.84	153 183	
Total	313	. 51	22	4,351	198	2,216	101	13. 91	150	
Slag loaders	313 313	- 199 - 43g		1, 905 1, 654	212 264	368 460	115	1.37	137	
Turners	313 313	. 72 . 93 j	5	896 306	179 306	647 286	129 286	2.66 4.38	226 290	
Total	313	.779	6	1,202	200	933	156	2.54	243	
Watchmen	213 313	. 224	13	1, 140 2, 217	255 171	1, 421	109	1. 64 7. 06	101 201	
The establishment		.71	£20	160. :10	274	1:9, 512	145	540. 70	==	

TANK XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINUED OF EUROPE—Continued.

ESTABLISHMENT No. —.

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Occupation.	Work-	Actual daily earn- ings, or daily		ctual oc	ndition	for peri	od.	workn	tion if nen had nuous yment.
	days in the period.	rate nearest to average	Dif- ferent	Days of work done.		Earnings.		Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total	Aver- age.	sary em- ployés.	average earnings per em- ployé.
Blacksmith	92	\$1.19	1	92	92	\$109	\$109	1.00	\$109
Boiler cleaners	92 92	.32 .75	1	92 106	92 106	29 80	29 80	1.00 1.15	29 69
Total	92	.55	2	198	99	109	55	2.15	51
Bundle carriers	92 92 92 92 92	. 14 . 23 . 47 . 52 . 54	7 1 10 3 3	222 4 447 153 52	32 4 45 51 17	32 1 212 80 28	5 1 21 27 9	2.41 0.04 4.86 -1.66 0.57	13 23 44 48 50
Total	92	.40	24	878	37	353	15	9.54	37
Bundle carrier and heaters'	92	.56	. 1	52	52	29	29	0.57	51
Carpenter	92	. 68	1	92	92	62	62	1.00	62
Catchers	92 92 92 92 92 92 92	. 58 . 62 . 654 . 676 . 704 . 74	5 1 3 2 1	246 199 77 187 145 65 9	69 66 77 62 73 65	200 123 50 125 102 47 7	40 41 50 42 51 47 7	3.76 2.16 0.84 2.03 1.58 0.71 0.10	53 57 60 61 65 67 72
Total	92	. 631	16	1, 028	64	654	41	11.18	50
Chargers	92 92 92 92 93 93 93 93 93 92 93	.47 .50 .521 .58 .62 .72 .731 .811 .831	1 6	468 82 40 91 286 63 25 77 81 18	31 82 40 9 32 63 4 39 41 6	221 40 20 48 165 39 18 57 66 15	15 40 20 5 18 39 3 29 33 5 1	5, 09 0, 89 0, 43 0, 99 3, 11 0, 68 0, 27 0, 84 0, 20 0, 01	43 45 46 49 53 57 66 68 75 77 92
Total	92	. 56	51	1, 232	24	690	14	13, 39	52
Chargers and heaters. Charger and heaters' belper. Chemist, assistant Cleaner. Coal igniter Coal suppliers Craneman Cutters	92 92 92 92	1. 20 .69 .463 .58 .72 .48 .26	111111111111111111111111111111111111111	156 58 92 92 39 175 82 311	78 58 92 92 39 44 82 62	187 40 43 53 28 84 21 140	94 40 43 53 28 21 21 22	1.70 0.63 1.00 1.00 0.42 1.90 6.89 3.38	110 63 43 53 66 44 24
Door boys	92 92 92 92 92 92	.141 .194 .21 .28 .31	28 7 1 5 2 1	1, 168 152 65 82 15 59	42 22 63 16 8 59	169 29 14 23 5	6 4 14 5 3 28	12.70 1.65 0.71 0.89 0.16 0.64	13 18 20 26 31
Total	93	. 17	44	1, 541	35	268	6	16.75	16
Door boy and straightener Doorkeeper Dumper	92 92 92	. 334	1 1 1	15 98 92	15 98 92	5 61 21	5 61 21	0.16 1.07 1.00	31 57 21

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINUET OF EUROPE—Continued.

Occupation.	Work-	Actual daily earn- ings, or daily	1	otual co	works	ition if nen had inuous yment			
	ing days in the period.	rate nearest to average daily earn- ings.		Days of work done.		Rarnings.		Neces-	Conse- quent
			em- ploy- és.	Total.	Aver- age.	Total	Aver-	em- ployés.	earnings per em- ployé.
Elevator tenders	92 92 92 92 92	\$0. 21 . 26 . 28 . 33 . 35	1 3 2 3 1	88 167 161 150 31	88 56 81 50 31	\$19 43 45 49 11	\$19 14 23 16 11	0.96 1.82 1.75 1.63 0.34	\$20 24 26 30 33
Total	92	.28	10	597	60	167	17	6, 50	26
Engineers	92 92 92 92 92 92 92	.26 .48 .49 .50 .53 .54 .57	1144888	138 170 92 365 168 262 282 183	69 43 92 91 42 87 94	36 82 45 185 89 142 158 108	18 21 45 46 22 47 53 54	1.50 1.85 1.00 3.97 1.83 2.85 3.07 1.99	24 44 45 47 49 50 52 54
Total	92	.51	23	1, 660	72	845	37	18.06	47
Examiner	92	.42	1	92	92	39	39	1.00	39
Fillers	92 92 92 92 92 92 92 92	. 48 . 51 . 52 . 54 . 56 . 59 . 66	9 22 11	2, 730 675 673 216 198 88 109	62 75 75 108 99 88 109	1, 303 331 250 118 110 52 71	30 37 39 59 55 52 71	29. 67 7. 34 7. 32 2. 35 2. 15 0. 96 1. 18	44 45 48 50 51 54
Total	92	.50	68	4, 689	69	2, 335	34	50.97	48
Finishers.	92 92 92 92 92 92 92 92 92	.34 .39 .41 .44 .48 .52 .58	1 4 16 4 7	148 26 103 933 187 330 553 29	74 26 26 58 47 83 79 29	50 10 43 422 90 172 319 17	25 10 11 26 23 43 46 17	1. 61 0. 28 1. 12 10. 14 2. 03 3. 59 6. 01 0. 32	31 35 38 42 44 48 53
Total	92	. 481	39	2, 309	59	1, 123	29	25. 10	45
Firemen	92 92 92 92 92	.52 54 .56 .58 .64	5 2 1 2 2	373 55 47 67 182	75 28 47 34 21	193 30 26 39 116	39 15 26 20 58	4. 03 0. 60 0. 51 0. 73 1. 98	48 50 51 54 59
Total	92	56	12	724	60	404	34	7. 87	51
Foremen	92 92	.79 .95	1 3	92 184	92 61	72 174	72 58	1.00 2.00	7± 87
Total	92	. 89	4	276	69	245	62	3.00	82
Foremen, laborers	92 92 92 92 92	. 47è . 54 . 61 . 68 . 82è	1 1 1 1 1 1	92 92 80 87 92	92 92 80 87 92	43 49 48 59 75	43 49 48 59 73	1.00 1.00 0.87 0 95 1.00	43 49 55 61 75
Total	92	. 62	5	443	89	274	53	4. 82	57
Foreman, transportation	92	1. 23}	1	3	3	4	4	0.03	123

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ndition	for perio	d.	Condition if workmen had continuous employment.	
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	of lone.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	.Total.	Aver- age.	em- ployés.	average earnings per em- ployé.
Heaters	92 92 92 92 92	\$0. 771 1. 001 1. 35 1. 70	6 15 10 4	137 885 594 151	23 59 59 38	\$106 891 802 257	\$18 59 80 64	1. 49 9. 62 6. 46 1. 64	\$71 93 124 157
Total	92	1.16	35	1, 767	50	2, 056	59	19. 21	107
Heaters' helpers	92 92 92 92 92 92 92 92	. 631 . 681 . 731 . 75 . 771 . 80	21 3 14 3 3 1 2	1, 024 48 837 63 186 67 74	49 16 60 54 62 67 37	652 33 617 122 144 54 64	31 11 44 41 48 54 32	11. 13 0. 52 9. 10 1. 77 2. 02 0. 73 0. 80	59 63 68 69 71 74 80
Total	92	.701	47	2, 399	51	1, 686	36	26,07	65
Hookers-up	92 92 92 92 92 92 92 92	.44 .46 .50 .53 .58 .62 .66	1 2 11 3 15 5 2 2	68 56 412 78 647 214 17 23	68 28 37 26 43 43 9	30 26 207 41 376 131 11	30 13 19 14 25 26 6	0. 74 0. 61 4. 48 0. 85 7. 03 2. 33 0. 18 0. 25	41 42 46 48 53 56 60
Total	92	. 55	41	1, 515	37	839	20	16. 47	51
Hot pilers	92	.4	5	292	58	130	26	3.17	41
Keepers	92 92 92 92	.48 .52 .59 .651	1 9 3 3	19 758 280 319	19 84 93 106	9 395 165 203	9 44 55 68	0. 21 8. 24 3. 04 3. 47	44 48 54 56
Total	92	.56	16	1,376	86	772	48	14. 96	52
Keepers-up	92	.49	12	84	7	41	3	0.91	45
Laborers	92 92 92 92 92 92 92 92 92 92 92 92 92 9	.19 .24 .32 .39 .41 .43 .44 .46 .48 .50 .52 .60 .731	21 11 21 22 22 26 12 23 21	95 85 92 366 552 158 166 132 275 72 84 88 15 92	48 85 92 73 26 79 83 66 46 72 42 29 8	18 21 29 141 227 69 74 61 133 36 43 53 11	9 21 29 28 11 35 37 31 22 36 22 18 6 72	1. 03 0. 92 1. 00 3. 98 6. 00 1. 72 1. 80 1. 43 2. 99 0. 78 0. 91 0. 96 0. 16 1. 00	17 22 32 32 33 44 43 44 45 47 55
Total	92	. 43	51	2, 272	45	988	19	24. 68	40
Loaders	92 92 92 92 92	.25 .41 .44 .48 .50	1 8 47 9 1	593 2, 085 642 2	8 74 44 71 2	2 247 953 308 1	31 20 34 1	0.09 6.45 22.66 6.98 0.02	25 35 41 44 46
Total	92	. 454	66	3, 330	50	1,511	23	36. 20	42
Markers	92 92	.194	10	325 148	33 74	62 39	20	3. 53 1. 61	18 24
Total	92	.21	12	473	39	101		6.14	20

TABLE XII.—ACTUAL AND THEORETICAL TIME AND RARNINGS—Continued. P.—Mixed Iron and Steel: Continued of Europe—Continued.

ESTABLISHMENT No. - - Continued.

	Work	Actual daily earn- ings, or daily		Letual e	mdition	o for peri	od.	works	ition if nen had innous oyment.
Occupation.	days in the period.	nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	average earnings per em- ployé.
Masons	92 92	\$0.57 .43	5	317 334	63 67	\$180 143	\$36 29	8. 45 3. 63	\$52 39
Porters	92 92 92 92 92 92 92	.194 .254 .29 .314 .604	1 1 2 1 1	76 92 92 184 92 92	38 92 92 92 92 93	15 23 27 58 55 87	8 23 27 29 55 87	0.83 1.00 1.00 2.00 1.00	18 23 27 29 55 87
Total	92	. 42	8	628	79	265	33	6. 83	39
Repairers	92 92	.44 .56	1 3	59 250	59 83	26 140	26 47	0.64 2.72	41 52
Total	92	. 533	4	309	77	166	42	3, 36	49
Repairers, furnace	92	. 523	3	63	21	83	11	0.68	48
Rollers	92 92 92 92 92 92 92 92	. 724 . 74 . 77 . 79 . 83 . 89 . 99 1. 184	164855555	71 380 296 535 301 63 153 155	71 63 74 67 60 32 77 53	51 282 226 424 256 55 151 182	51 47 57 53 51 28 76	0.77 4.13 3.22 5.82 3.27 0.68 1.66 1.68	66 68 70 73 78 80 91
Total	92	. 83}	21	1,954	63	1,627	52	21. 23	77
Roll turners Roll turners' apprentice Sandmen	93 93 93	. 90 . 23 . 194	5 1 15	341 75 570	68 73 38	207 17 110	61	3, 71 0, 82 6, 20	83 21 18
Storekeepers	92 93	.41 .74	1	90 90	92 92	28 68	3.8	1.00	38
Twen	22	. \$7}	3	184	92	106	53		
Peraig 2 recero	教育教育教育教育教育教育教育	33 34 35 35 35 35 35 35 35 35 35 35 35 35 35	41249112	200 miles 100 mi	51 77 78 78 78 78 78 78 78 78 78 78 78 78	2014 200 200 200 200 200 200 200 200 200 200	13		•
7.000	**	. 04	7	R =3	4	: 47	::	M. E.	41
204 (2.49 344 exect (2.45)		.53	_	. 44	13	×	:•	: ::	*
W67-1-1708	****	N N N N N N N N N N N N N N N N N N N	***************************************	RYARA	กกลาก	# # # %	N 40 17 12 12 12 12 12 12 12 12 12 12 12 12 12	. N . N . N	77 10 10 10 10 10 10 10 10 10 10 10 10 10
	-	<u>~~</u>	-;		2	534	•	•*	c

PART II.-TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. — - Concluded.

	Work-	i amil		ctual co	adition	for peri	od.	Cond works cont	ition if oen had innous yment.
Occupation.	ing days in the period.	rate nearest to average	Dif.	Days work	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	ploy- 68.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Weighmen	92 92 92	\$0, 19 <u>1</u> . 28 . 31 <u>1</u>		271 225 136	68 45 15	\$53 63 43	\$13 12 5	2.95 2.45 1.48	\$18 25 20
	92 92 93 92	.31 .34 .52 .58 .60	5 5 4	61 19 375 379	31 4 75 95	21 10 217 227	11 2 43 57	0. 66 0. 21 4. 08 4. 12	\$18 25 29 20 21 21 48 48 55
Total	92	.43	34	1,466	43	633	19	15, 95	40
The establishment		. 581	802	40, 639	51	21, 800	27	441.76	· 49

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part L]

Ashmen	313 313	\$0.46½ .58½	11	1, 584 182	144 182	\$738 106	\$67 106	5. 06 0. 58	\$146 182
Total	313	.48	12	1,766	147	844	70	5.64	150
Ashmen and cleaners	313 313	. 363 . 683	1	338 236	169 236	124 162	62 162	1. 08 0. 75	115 215
Blacksmiths	313 313	. 524 . 65	14	3, 932 383	281 383	2, 059 249	147 249	12.56 1.22	164 203
Total	313	. 53}	15	4,315	288	2, 308	154	13.78	167
Blacksmiths' helpers	313 313	. 36½ . 52½	6	825 728	138 243	303 382	51 127	2. 64 2. 33	115
Total	313	.44	9	1, 553	173	685	76	4.97	138
Boiler tender Boilersmiths Bottom builders Bundlers Carpenters Catchers Chargers Cleaners Cleaners Cleaners	313 313 313 313 313 313 313 313 313	.77 .66 .49 .37 .545 .845 .455 .282	1 27 10 5 12 2 4 3	259 1, 519 6, 308 2, 221 1, 619 3, 310 537 1, 172 828	259 380 234 222 324 276 269 293 276	198 1, 006 3, 090 826 884 2, 800 244 335 449	198 252 114 83 177 233 122 84 150	0. 83 4. 85 20. 15 7. 10 5. 17 10. 58 1. 72 2. 74 2. 65	239 207 153 116 171 265 142 89 170
Convertermen	313	.60±	7 2	1, 544 582	221 291	933 478	133 239	4. 93 1. 86	189 257
Total	313	.661	9	2, 126	236	1, 411	157	6.79	208
Converterman and filler Cranemen Dolomite breakers Dolomite wheelers	313 313 313 313	.55½ .58½ .48 .34½	1 7 11 8	280 1, 083 2, 274 1, 574	280 155 207 197	155 631 1,097 542	155 90 100 68	0. 89 3. 46 7. 27 5. 03	173 182 151 108
Drag-outs	313 313 313	. 551 . 671 . 721	21 2 1	4, 359 617 307	208 309 307	2, 417 417 223	115 209 223	13, 93 1, 97 0, 98	174 213 227
Total	313	.58	24	5, 283	220	3, 057	127	16.88	181
Engineers Engineer, blowing Engineer, crane	313 313	. 634 . 695 . 544	6 1 1	1, 996 361 118	333 361 118	1, 272 250 64	212 250 64	6,38 1,15 0,38	199 217 170

TABLE XIL.—ACTUAL AND THEORETICAL FINE AND EARNINGS—Continued. P.-Mixed Iron and Steel: CONTINENT OF EUROPE-Continued.

ESTABLISHMENT No .- Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ndition	for peri	od.	Condition if workmen had continuous employment	
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Consequent
		daily earn- ings.	em- ploy- ós.	Total.	Aver- age.	Total	Aver-	em- ployés.	earnings per em- ployé.
Engineers, locomotive Engineers, pump Engineer, stamping Engineers, ventilator Engineer, winding	313	\$0. 61 .571 .471 .651 .351	2	1, 200 528 268 714 264 2, 405	300 264 268 357 264 200	\$733 304 128 395 94 1,314	\$183 152 128 198 94 110	3, 83 1, 69 0, 86 2, 28 0, 84 7, 68	\$191 180 140 173 111 171
Finishers	313 313 313	.454 .60 .764	12 38 3	2, 605 11, 438 870	217 301 290	1, 186 6, 856 667	99 180 222	8. 32 36. 54 2. 78	143 189 240
Total	313	. 58}	53	14, 913	281	8, 709	164	47. 64	183
Finishers' helper	313 313 313 313 313 313 313 313 313 313	.263 .482 .74 .87 .533 .564 .764 .605 .106 .264 .500 .455 .504 .506 .506 .506 .506 .506 .506 .506 .506	2 1 1 1 2 1 1 1 1 1 2 1 1 1 1 2 1 1 1 1	181 5, 150 488 374 266 175 699 329 302 141 1, 323 1, 422 308 302 308 727 12, 712 1, 130	181 228 244 374 266 175 350 329 302 141 323 158 308 308 308 308 308 308 212	48 2, 991 361 142 99 498 263 231 94 1, 055 255 517 166 163 411 6, 839 796	48 111 181 326 142 99 249 263 231 94 25 350 57 166 150 163 206	0. 58 19. 65 1. 56 1. 19 0. 85 0. 25 2. 23 1. 05 4. 18 0. 45 4. 18 0. 96 1. 14 2. 32 40. 61	883 159 223 277 167 1777 2232 250 250 250 191 160 155 143 177
234	_		-		-		_	44, 22	173
Hookers	313 313 313	. 55 . 62 . 754	84 38 2	9, 513 476	216 250 238	7,635 5,915 300	119 156 180	30, 39 1, 52	195
Total		. 63	40	9, 989	230	6, 275	157	31.91	197
Hooker and rollers' helper Ingot loaders Ingot wheeler Iron loaders Iron wheelers Joiner	313 313 313 313	. 62 . 46 . 471 . 55 . 541 . 621	1 26 1 6 5	209 3, 957 167 1, 202 1, 124 378	209 152 167 200 225 378	130 1, 818 79 664 611 236	130 70 79 111 122 236	0. 67 12. 64 0. 53 3. 84 3. 59 1. 21	195 144 148 173 170 195
Laborers	313 313 313	. 233 . 36 . 504	41	2, 954 7, 496 2, 538	269 183 254	687 2, 681 1, 285	62 65 129	9.44 23.95 8.11	73 112 158
Total	313	. 36	62	12, 968	209	4, 053	75	41.50	112
Levermen	313 313	. 54	6 2	1, 715 660	298 330	927 424	155 212	5. 48 2. 11	169 201
Total	313	. 57	8	2, 375	297	1, 351	169	7.59	178
Lime wheelersLoadersLoadersLockemithsMachinistsMasonsMasons' helpers	313 313 313	.55 .51 .57 .62 .52 .20	15	1, 162 2, 779 5, 189 2, 413 3, 570 2, 288	232 232 305 241 238 176	642 1, 434 2, 986 1, 495 1, 850 474	128 120 176 150 123 36	3. 71 8. 88 16. 58 7. 71 11. 41 7. 31	173 162 180 194 162 65



PART II.—TIME AND EARNINGS.

Table XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. - - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had nuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent average
	Ė	daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	per em- ployé.
Melters	313 313 313	\$1. 11 .175 .49	3 1 6	853 304 1, 798	284 304 300	\$945 53 882	\$315 58 147	2.73 0.97 5.74	\$347 53 154
Moulders	313 313 313	. 491 . 66 . 981	8 27 10	1, 653 6, 032 2, 402	207 223 240	822 3, 969 2, 365	103 147 237	5. 28 19. 27 7. 67	156 206 308
Total	313	.71	45	10, 087	224	7, 156	159	32, 22	222
Pig iron panmen	313 313	. 63 1. 07	8	2, 205 310	276 310	1,390 332	174 332	7.04	197
Total	313	. 681	9	2, 515	279	1, 722	191	8.03	214
Plate draughters	313 313 313 313 313	.78 .69 .534 .66	3 2 5 1 8	1,062 621 1,695 331 1,516	354 311 339 331 190	831 428 911 218 735	277 214 182 218 92	3, 39 1, 98 5, 42 1, 06 4, 84	245 216 168 206 153
Rollers	313 313	.72 1.134	2	547 355	274 355	394 403	197 403	1.75	225 355
Total	313	. 881	3	902	301	797	266	2, 88	277
Rollers' helpers.	313	. 60	3	922	307	551	184	2.95	187
Roughers	313 313	. 90½ 1. 07	13	3, 568 1, 731	274 289	3, 232 1, 850	249 308	11. 40 5. 53	284 335
Total	313	.96	19	5, 299	279	5, 082	267	16. 93	300
Roughers' helper Saddler Sample boys Sawyers	313 313 313 313	.54 .91± .36 .59±	1 1 4 2	326 90 839 707	326 20 210 354	176 82 301 421	176 82 75 211	1. 04 0. 29 2. 68 2. 26	169 285 111 186
Screw setters	313 313	.481 .80	1 2	325 455	325 228	157 364	157 182	1.04 1.45	151 250
Total	313	. 67	3	780	260	521	174	2.40	209
Shear boys. Shearmen shelpers Shearmen's helpers Slag wheeler. Slagmen Stoppermaker Stoppermaker Stoppermaker's helper. Switchmen	313 313 313 313 313 313 313 313	.36 .54 .52 .52 .55 .67 .49 .47 .36	10 24 1 10 10 1 1 1 3 2	791 2, 431 4, 774 281 1, 901 316 280 419 487	198 243 199 281 190 316 280 140 244	284 1, 312 2, 499 147 1, 059 214 188 199 175	71 131 104 147 106 214 138 66 88	2.53 7.77 15.25 0.90 6.07 1.01 0.89 1.34 1.56	112 165 164 164 174 212 154 149
Transportmen	313 313	.43	38 1	6, 135 276	161 276	2, 651 164	70 164	19. 60 0. 88	135 186
Total	313	.44	39	6, 411	164	2, 815	72	20. 48	137
Turners	313	. 66	4	1,003	251	661	165	3. 20	206
Turners' helpers	313 313	. 34	6	1, 547	258 215	526 407	88 102	4.94 2.75	296 148

TABLE XII.—ACTUAL AND THEORETICAL FIME AND EARNINGS—Continued. P.-Mixed Iron and Steel: CONTINENT OF EUROPE-Continued.

ESTABLISHMENT No .- Continued.

,	Work-	Actual daily earnings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done,	Earni	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Engineers, locomotive	313 313 313 313 313 313	\$0. 61 . 574 . 474 . 565 . 354	4 2 1 2 1 12	1, 200 528 268 714 264 2, 405	300 264 268 357 264 200	\$733 304 128 395 94 1,314	\$183 152 128 198 94 110	3, 83 1, 69 0, 86 2, 28 0, 84 7, 68	\$191 180 149 173 111 171
Finishers	313 313 313	.45± .60 .76±	12 38 3	2, 605 11, 438 870	217 301 290	1, 186 6, 856 667	99 180 222	8. 32 36. 54 2. 78	143 189 240
Total	313	. 581	53	14, 913	281	8, 709	164	47.64	183
Finishers' helper. Firemen, boiler. Foremen, bottom builders Foreman, carpenters Foreman, converters Foreman, fillers Foreman, laborers Foreman, machinists Foreman, machinists Foreman, machinists Foreman, transportation Founder Greasers Gutterman Hammer lifter Hammer tender. Hammersmiths Heaters	313 313 313 313 313 313 313 313 313 313	.26\\\.26\\.26\\\.26\\\.26\\\.26\.26	1 27 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	181 6, 150 488 574 266 175 699 329 329 141 1, 308 41 323 1, 422 308 802 356 727	181 228 244 374 266 175 350 329 141 327 41 323 158 302 356 364	48 2, 901 361 326 142 99 498 263 231 94 1, 055 550 517 166 163 411 6, 839	48 111 181 326 142 99 249 263 231 94 264 255 350 57 163 206	0. 58 19. 65 1. 50 1. 19 0. 85 0. 22 1. 05 0. 45 4. 18 0. 93 1. 03 1. 03 1. 03 1. 03 1. 04 1. 04	833 1552 2733 167 1777 2232 250 299 209 2522 251 191 169 155 143 177
	313	.70	4		283	796	199	3. 61	
Total	313	. 55	64	13, 842	216	7,635	119	44. 22	173
Hookers	313	. 62 . 754	38 2	9, 513 476	250 238	5, 915 360	156 180	30. 39 1. 52	195 237
- Total	313	. 63	40	9, 989	250	6, 275	157	31.91	197
Hooker and rollers' helper Ingot loaders Ingot wheeler. Iron loaders Iron wheelers. Joiner	313 313 313 313 313 313	.62 .46 .471 .55	1 26 1 6 5	209 3, 957 167 1, 202 1, 124 378	209 152 167 200 225 378	130 1, 818 79 664 611 236	130 70 79 111 122 236	0. 67 12. 64 0. 53 3. 84 3. 59 1. 21	195 144 148 173 170 195
Laborers	313 313 313	. 234 . 36 . 504	11 41 10	2, 954 7, 496 2, 538	260 183 254	687 2, 681 1, 285	62 65 129	9.44 23.95 8.11	73 112 158
Total	313	. 36	62	12, 988	209	4, 653	75	41.50	112
Levermen	313 313	. 54	6 2	1, 715 660	296 330	927 424	155 212	5. 48 2. 11	169 201
Total	313	. 57	8	2, 375	297	1, 351	169	7.59	178
Lime wheelersLoadersLocksmithsMacbinistsMasonsMasons' helpers	313 313 313 313 313 313	. 55 . 51½ . 57½ . 62 . 52 . 20½	10	1, 162 2, 779 5, 189 2, 413 3, 570 2, 288	232 232 305 241 238 176	642 1, 434 2, 986 1, 495 1, 850 474	128 120 176 150 123 36	3.71 8.88 16.58 7.71 11.41 7.31	173 162 180 194 162 65

PART IL.—TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINUE OF EUROPE—Concluded.

ESTABLISHMENT No. - - Concluded.

	Work-	Actual daily earn- ings, or daily	4	ctual co	ondition	for peri	od.	works	ition if men had innous syment.
Occupation.	days in the period.	rate nearust to average	Dif- ferent	Days work	of done.	Earn	ngs.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Foreman, repairers	92	\$1,58	1	92	92	\$145	\$145	1.00	\$145
Heaters	79 79 79	1.60 2.04	6 2 2	377 127 149	63 64 75	371 203 305	62 102 153	4.77 1.61 1.89	78 126 162
Total	79	1,34	10	653	65	879	88	8. 27	106
Hookers-up	79 79	. 35 . 77	8	438 405	55 68	153 314	19 52	5. 54 5. 13	28 61
Total	79	. 551	14	843	60	467	33	10.67	44
Iron breakers	79	. 685	2	146	73	100	50	1.85	24
Iron wheelers	79 79 79	.77 .82 1.01	1 1 1	75 75 75	75 75 75	58 62 76	58 62 76	0. 95 0. 95 0. 95	61 65 80
Total	79	.87	3	225	75	196	65	2.85	69
Machinists	79 70 79 79	.721 .87 .961 1.06	1 1 1	133 80 85 13	67 80 85 13	96 69 81 14	48 69 81 14	1.68 1.01 1.08 0.16	57 68 75 83
Total	79	. 833	5	311	62	260	52	3. 93	66
Oremen Porter	79 92	. 55 . 48½	2 1	129 92	65 92	71 44	36 44	1.63 1.00	4
Puddlers	79 79 79	1.04 1.18 1.32	23 3 19	976 67 972	42 22 51	1, 015 79 1, 283	44 26 68	12.35 0.85 12.30	82 93 104
Total	79	1.18	45	2, 015	45	2, 377	53	25, 50	93
Rollers	79 79 79	1.09 1.201 1.71	7 4	431 286 274	62 72 69	469 345 468	67 86 117	5. 46 3. 62 3. 47	95 135
Total	79	1. 29	15	991	66	1, 282	85	12.55	102
Straighteners	79 79	. 684	6 2	227 141	38 71	156 125	26 63	2.87 1.78	54 70
Total	79	. 76	8	368	46	281	35	4.65	60
Sweepers	79	. 23	2	113	57	26	13	1.43	18
Turners	79 79 79	. 431 . 621 . 911	1 1	90 41 92	90 41 92	39 25 84	39 25 84	1.14 0.52 1.16	34 48 72
Total	79	. 661	3	223	74	148	49	2.82	52
Warehouseman	92 79	.58	1	93 92	92	53 63	53	1.00	53
in aret remosts	79	. 73	1	93	93	68	68 68	1.16 1.18	54 58
Total	79	.71	2	185	93	131	66	2.34	56
Weighmen	79 79	.58	1	75 71	75	43 48	43 48	0.95	45 53
Total	79	. 624	2	146	73	91	46	1.85	49
The establishment		. 95	153	9, 162	60	8, 689	57	114.77	76

410 REPORT OF THE COMMISSIONER OF LABOR.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINUET OF EUROPE—Continued.

ESTABLISHMENT No. - Concluded.

	Work- ing daily earn- ings, or daily			ctual co	od.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	rate Dearest to	Dif- ferent	Days of work done.		Earnings.		Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.		Aver-	Total	Average.	em- ployés.	earnings per em- ployé.
Watchman	313	\$0.39}	1	366	366	\$145	\$145	1.17	\$124
Weighmen	313 313	. 68 . 76 <u>1</u>	2	603 302	302 302	409 231	205 231	1.93 0.96	212 239
Total	313	. 70}	3	905	302	640	213	2.89	221
Welders	313 313	1.00	8	2, 011 1, 981	251 248	1, 496 1, 985	187 248	6. 42 6. 33	233 314
Total	313	.87	16	3,992	250	3, 481	218	12,75	273
The establishment		, 56	842	196, 304	233	110,848	132	627.12	177

ESTABLISHMENT No.

[No statement of cost of production for mixed iron and steel is shown in Part L] .

Ashmen	79	\$0.77	2	103	52	\$79	\$10	1. 30	\$61
Blacksmiths	79 79 79	.77 .87 1.10	1	92 99 99	92 99 99	71 86 109	71 86 109	1. 16 1. 25 1. 25	61 69 87
Total	79	. 011	3	290	97	266	89	3. 66	72
Blacksmiths' helpers	79 79	. 60 . 77	1	47 16	16	28 12	28 12	0. 59 0. 20	47 59
Total	79	. 634	2	63	32	40	20	0.79	50
Boilerman	79	. 87	1	89	89	77	77	1.13	68
Bundlers	79 79	.33 .72	6 2	236 132	39 67	78 96	13 48	2, 99 1, 67	26 57
Total	79	.47	8	369	46	174	22	4.66	37
Carpenters	79 79	.67½ .77	1	77 105	77 105	52 81	52 81	0.97 1.33	53 61
. Total	79	. 73	2	182	91	133	67	2, 30	58
Coal wheelers	79	. 53	2	158	78	83	42	1.97	42
Cutters	79 79	. 61 . 95 <u>è</u>	8 2	487 150	61 75	304 143	38 72	6. 16 1. 90	49 75
Total	79	. 70	10	637	64	447	45	8. 06	55
Engineers	79 79 79	. 621 . 675 . 731	1 1 1	117 93 71	117 93 71	73 62 52	73 62 52	1.48 1.18 0.90	49 53 58
Total	79	. 661	3	281	94	187	62	3.56	53
Foremen, mill	92 92	1. 58à 2, 22	1	92 92	92 92	145 203	145 203	1.00	145 203
Total	92	1.89	2	184	98	348	174	2.00	174
Foremen, puddlers	92 92	1.43 1.90à	1	92 92	92 92	130 174	130 174	1.00	130 174
Total	92	1.65	2	184	92	304	152	2.00	152



TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel: GREAT BRITAIN—Continued.

ESTABLISHMENT No .- - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	a for peri	od.	cont	ition if nen had inuous oyment.
Occupation.	ing days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Cleaner, office	48	\$0.36}	1	48	48	\$18	\$18	1.00	\$18
Cleaners, road	48 48 48 48	.301 .361 .40 .57	2 2 1 1	19 77 45 46 56	10 39 45 46 56	6 28 18 26 34	14 18 26 34	0.40 1.60 0.94 0.96 1.17	15 17 19 27 29
Total	48	. 46	7	243	35	112	16	5.07	22
Coachers	48 48 48 48 48 48 48 48 48 48	30 36 42 46 48 52 54 59 61 63 65 70	1 2 3 6 2 1 3 8 7 5 20 1	10 96 136 272 75 46 117 266 254 196 601 34	10 48 45 45 38 46 39 33 36 39 30 34	3 34 58 127 37 24 64 157 155 124 359 24	3 17 19 21 19 24 21 20 22 25 19 24	0. 21 2. 00 2. 83 5. 67 1. 56 0. 96 2. 44 5. 34 5. 29 4. 08 2. 52 10. 71	14 17 20 21 24 25 26 28 28 30 31
Total	48	. 57	59	2, 103	36	1, 196	20	43, 81	27
Cranemen	48 48 48 48	.40 .44 .484	1 9 2 1	5 34 47 12	5 4 24 12	15 22 6	2 2 11 6	0, 10 0, 71 0, 98 0, 25	19 21 22 24
Total	48	. 46	13	98	8	45	3	2.04	22
Crop-end men	48 48 48 48 48 48	. 241 . 354 . 404 . 425 . 464 . 485 . 504	1 2 2 1 3 2 1	46 42 66 41 92 95 20	46 21 33 44 31 48 20	11 15 27 19 43 46 10	11 8 14 19 14 23 10	0.96 0.88 1.38 0.92 1.92 1.98 0.42	11 17 20 21 22 22 24
Total	48	. 42	12	405	34	171	14	8.46	20
Cutter	48 48	. 46} (a)	1 2	45 (a)	45 (a)	21 177	21 89	0.94 (a)	(a) 22
Dippers	48 48 48	.57 .65 .71	1 1	59 33 35	30 33 35	33 22 24	17 22 24	1.23 0.69 0.73	27 32 33
Total	48	. 62	4	127	32	79	20	2.65	30
Dipper and weighman	48	. 48	1	62	62	30	30	1.29	23
Doggers	48 48	.48§	1 4	73 160	73 40	37 88	37 22	1 52 3, 33	24 26
Total	*48	. 531	5	233	47	125	25	4, 85	26
Dogger and unloader	48	. 48	1	76	76	37	37	1.58	23
Drag-offs	48 48 48	.57 .583 .63	3 1 1	· 65	22 12 43	37 7 27	12 7 27	1. 35 0. 25 0. 90	27 28 30
Total	48				24	71 work don	14	2, 50	

410 REPORT OF THE COMMISSIONER OF LABOR.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. P.—Mixed Iron and Steel: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. - Concluded.

	Work-	amy		ctual co	ndition	for peri	od.	werkn	ition if nen had nuous yment.
Occupation.	days in the	the nearest to Dif. Days of work done. Earnings.		ngs.	Neces-	Conse- quent			
		daily earn- ings.	ploy-	Total.	Avor-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Watchman	313	\$0.39 }	1	366	366	\$145	\$145	1. 17	\$124
Weighmen	318 318	. 68 . 76)	2	983 302	302 302	409 231	205 231	1.98 0.96	212 229
Total	313	. 70)	3	905	302	640	218	2.89	221
Welders	313 318	.741 1.00	8	2, 011 1, 961	251 248	1, 496 1, 965	187 248	6. 42 6. 33	233 314
Total	313	. 87	16	8, 992	250	3, 481	218	12.75	278
The establishment		. 56)	842	196, 304	233	110, 848	132	627. 12	177

ESTABLISHMENT No. -.

[No statement of cost of production for mixed iron and steel is shown in Part L] .

Ashmen	79	\$0.77	2	108	52	\$79	\$10	1. 80	\$61
Blacksmiths	79 79 79	. 77 . 87 1. 10	1 1 1	92 99 99	92 99 99	71 86 109	71 86 109	1. 16 1. 25 1. 25	61 69 87
Total	79	. 91 }	3	290	97	266	80	8. 66	72
Blacksmiths' helpers	79 79	. 60 . 77	1	47 16	47 16	28 12	28 12	0. 59 0. 20	47 50
Total	79	. 634	2	63	32	40	20	0. 79	50
Boilerman	79	. 87	1	89	89	77	77	L.13	66
Bundlers	79 79	. 33 . 72	6 2	236 132	89 67	78 96	18 48	2.99 1.67	26 57
Total	79	.47	8	369	46	174	23	4.66	87
Carpenters	79 79	. 67 <u>1</u> . 77	1 1	77 105	77 105	52 81	52 81	0. 97 1. 88	58 61
. Total	79	. 73	2	183	91	133	67	2.30	54
Coal wheelers	79	. 53	2	156	78	83	42	1.97	43
Cutters	79 79	. 61 . 95)	8 2	487 150	61 75	304 143	38 73	6. 16 1. 90	49 75
Total	79	. 70	10	637	64	447	45	8. 06	56
Engineers	79 79 79	. 621 . 675 . 731	1 1 1	117 93 71	117 93 71	73 62 52	73 62 52	1. 48 1. 18 0. 90	49 53 58
Total	79	. 66}	3	281	94	187	62	3, 56	53
Foremen, mill	92 92	1. 58½ 2, 22	1 1	92 92	92 92	145 203	145 203	1.00 1.00	145 203
Total	92	1.89	3	184	98	348	174	2.00	174
Foremen, puddlers	92 92	1. 43 1. 90)	1	92 92	92 92	130 174	130 174	1.00 1.00	130 174
Total	92	1.65	2	184	92	304	152	2.00	152

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel: GREAT ERITAIN—Continued.

ESTABLISHMENT Mo. - - Continued.

	Work	Actual daily earn- ings. or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total	Aver- age.	em- ployés.	earnings per em- ployé.
Foreman, masons Foreman, mill	48 48	\$1.00½ 1.21½	1	48 48	48 48	\$53 58	\$53 58	1.00	\$53 58
Foremen, puddlers	48	1.62	1	48	48	47 78	47 78	1.00	47 78
Total	48	1.30	2	96	48	125	63	2.00	63
Foreman, rail bank Foreman, roil turners Gaggers Gaggers and laborers Gas tender Gaugers	48 48 48 48 48	1. 46 2. 84 (a) .53 .71 .364	1 12 2 2 1	48 (a) 79 48 146	48 48 (a) 40 48 37	70 136 371 42 34 54	70 136 31 21 34 14	1.00 1.00 (a) 1.65 1.00 3.04	70 136 (a) 26 34 18
Greasers	48 48	.501	1	186 81	47 81	94 47	24 47	3. 88 1. 69	24
Total	48	. 53	5	267	53	141	28	5, 57	25
Grinder	48	(a)	1	(a)	(a)	48	48	(a)	(a)
Guillotine tenders	48 48 48 48	. 55 . 59 . 63 . 65	1 4 1	37 34 198 36	37 34 50 36	20 20 122 23	20 20 31 23	0.77 0.71 4.13 0.75	26 28 30 31
Total	48	. 601	7	305	- 44	185	26	6, 36	29
Hammermen	48	. 55	5	245	49	134	27	5.10	26
Haulets	48 48 48 48 48 48 48	.363 .389 .405 .465 .504 .61	1 1 1 1 2 2 2	38 131 46 45 48 47 102 105	38 33 46 45 45 48 47 51 53	14 50 19 20 22 23 63 70	14 13 19 20 22 23 23 32 35	0. 79 2. 73 0. 96 0. 94 1. 00 0. 98 2. 13 2. 19	18 18 20 21 22 23 30 32
Total	48	. 50	13	562	43	281	22	11.72	24
Heaters	48 48 48	.51 .61 (a)	1 2 66	57 86 (a)	57 43 (a)	29 51 2,425	29 26 37	1.19 1.79 (a)	24 28 (a)
Total	48	(8)	69	(b)	(6)	2, 505	36	(8)	(b)
Helver Hookers	48	.63	8	30 175	30 29	19 46	19	0. 63 3. 65	30 13
	48 48 48 48 48 48 48 48 48 48 48 48	. S24 . 384 . 404 . 504 . 505 . 57 . 60 . 63 . 65 . 67 . 73 . 75	2 3	139 52 204 15 21 108 33 105 31 43 36	43 22 46 52 51 12 22 5 18 17 26 31 43	28 15 54 21 87 7 11 61 3 22 21 68 21 30 26	14 8 18 21 222 7 11 12 3 11 11 17 21 30 26	1. 77 0. 92 2. 90 1. 08 4. 25 0. 31 0. 44 2. 25 0. 75 0. 69 2. 19 0. 75 0. 69 0. 75	13 16 16 19 19 20 22 25 27 29 29 31 31 33 33

a Paid by the quantity. The daily rate of pay and days of work done cannot be gives.
 b No total can be made for the reason shown in the preceding footnots.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel GREAT ERITAIN.

ESTABLISHMENT No. —.
[No statement of cost of production for mixed iron and steel is shown in Part I.]

	Work-	Actual daily earn- ings, or daily		etual co	ondition	for period	ođ.	work	ition if men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Consequent average
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	per em- ployé.
Ashmen	48 48 48	\$0.69 .73 .75	6 1 1	271 47 51	45 47 51	\$187 34 38	\$31 34 38	5, 65 0, 98 1, 06	\$33 35 36
Total	48	.70	8	369	46	259	32	7. 69	34
Ballers	48 48 48	. 485 . 504 . 544	13 5 3	273 126 104	21 25 35	131 65 56	10 13 19	5. 69 2. 63 2. 17	23 25 26
Total	48	.50	21	503	24	252	12	10.49	24
Bank cleaner	48	(a)	1	(a)	(a)	18	18	(a)	(0)
Blacksmiths	48 48 48 48	.71 .73 .81	1 2 2 1	88 52 99 70	44 52 50 70	63 38 81 60	32 38 41 60	1.83 1.08 2.06 1.46	34 35 39 41
Total	48	. 781	6	309	52	242	40	6.43	38
Blacksmithe' strikers	48 48 48	. 481 . 521 . 541	1 1 6	50 41 270	50 41 45	24 21 147	24 21 25	1.04 0.85 5.63	23 25 26
Total	48	. 53	8	361	45	192	24	7. 52	26
Bloomers	48 48 48	.75 .77 (a)	2 4 7	108 151 (a)	54 38 (a)	81 116 242	41 29 35	2. 25 3. 15 (a)	36 37 (a)
Total	48	(b)	13	(6)	(b)	439	34	(b)	(0)
Bloomer and roller	48	(a)	1	(a)	(a)	98	98	(a)	(CI)
Bloomers' helpers	48 48	. 541	1	34 39	34 39	18 23	18 23	0.71 0.81	25 28
Total	48	. 56	2	73	37	41	21	1.52	27
Boiler cleaners	48 48	.61 (a)	3	93 (a)	(a)	56 160	19 160	1.94 (a)	(D) 29
Carpenters	48 48 48	.64 .71 .81	1 2 1	39 140 62	39 70 62	25 99 50	25 50 50	0, 81 2, 92 1, 29	31 34 39
Total	48	.72	4	241	60	174	44	5. 02	35
Chippers and filers	48 48	.55 (a)	2 1	99 (a)	50 (a)	54 57	27 57	2.06 (a)	(a) 26
Total	48	(6)	3	(b)	(b)	111	37	(b)	(b)
Cinder wheelers	48 48 48	. 184 . 464 . 524	4 2 2	124 64 134	31 32 67	23 30 70	6 15 35	2.58 1.33 2.79	9 23 25
Total	48	.38	8	322	40	123	15	6. 70	18
Cleaners, mill	48 48 48	. 481 . 504 . 521	1 3 1	46 111 52	46 37 52	22 56 27	22 19 27	0, 96 2, 31 1, 08	23 24 25
Total		. 50			42		21	£ 35	24

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. So total can be made for the reason shown in the preceding foomets.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel: GREAT BRITAIN—Continued.

ESTABLISHMENT No. - - Continued

•	Work-	Actual daily earn- ings, or daily		ctual oc	adition	a for peri	od.	works	ition if nen had innous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Barni	ngs.	Neces-	Consequent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total	age.	eary om- ployés.	earnings per em- ployé.
Masons' helpers	48	\$0. 55	6	271	45	\$148	\$25	5.65	\$26
Messengers	48 48	. 244 . 36	1	43 48	48 48	12 18	12 18	1.00 1.00	12 18
Total	48	. 81}	2	86	48	30	15	2.00	15
Oilors and wheolers	48 48	L 77 (6)	2 1	87 (4)	44 (a)	154 104	77 104	1. 81 (a)	(a) 85
Pilers	48 48 48	. 241 . 484 . 55	5 1 1	232 47 53	46 47 53	57 23 30	11 23 30	4. 83 0. 98 1. 10	12 23 27
Total	48	. 23	7	332	47	110	16	6.91	16
Pressmen	48 48 48	. 281 . 401 . 73	1 5 1	46 187 53	46 87 58	13 75 38	- 13 15 33	0.96 2.90 1.10	14 19 34
Total	48	.44	7	286	41	126	18	5. 96	21
Puddlers	48	(a)	57	(a)	(a)	2, 377	42	(4)	(e)
Pullers-up	48 48 48 48	. 201 . 361 . 361	1 5 8 1	40 149 131 49	40 20 44 49	8 54 50 23	8 11 17 23	0. 83 3. 10 2. 73 1. 02	10 17 18 23
Total	48	. 364	10	369	37	135	14	7. 68	18
Punchers	48 48 48 48 48 48	. 16 . 48 <u>4</u> . 55 . 61 . 71 . 78 . 85	2 8 1 4 1 2	65 842 45 198 52 111 97	23 43 45 50 52 56 49	11 168 24 124 37 81	6 21 24 31 37 41 43	1.35 7.13 0.94 4.13 1.06 2.31 2.02	8 24 26 30 34 35
Total	48	. 58}	20	910	45	531	27	18.90	28
Raiser	48 48	. 25 . 62}	1	4 53	4 53	1 23	1 83	0, 63 1, 10	12 30
Roll turners	48 48 48 48	.57 .67 .71 .78	2 1 1 2	75 52 42 74	38 52 43 37	42 34 30 54	21 84 30 27	1.56 1.08 0.88 1.54	37 31 34 35
Total	48	. 66	6	243	41	160	27	5.06	22
Rollers	48 48	.61½ (a)	1 13	57 (a)	57 (a)	35 764	35 59	1. 19 (a)	(a) 29
Total	48	(b)	14	(b)	(6)	799	57	(6)	(b)
Rollers' helper	48 48 48	. 65 (a) . 43 <u>1</u> . 63	25 2 3	42 (a) 25 164	42 (a) 43 41	27 834 37 103	27 33 19 26	0.88 (a) 1.77 3.42	(a) 31 31 30

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the preceding focuses.

H. Ex. 265-27

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

Q.—Mixed Iron and Steel: GREAT BRITAIN—Continued.

ESTABLISHMENT No. - Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Different	Day	s of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és-	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Hot-bank men	48 48 48 48 48 48 48 48 48	\$0.263 323 363 384 403 444 463 484 504 55 663	52716212311	189 37 326 56 262 105 44 64 148 24 6	38 19 47 56 44 53 44 21 49 24	\$50 12 118 21 106 46 20 31 74 13	\$10 6 17 21 18 23 20 10 25 13	3. 94 0. 77 6. 79 1. 17 5. 46 2. 19 0. 92 1. 33 3. 08 0. 50 0. 13	\$13 16 17 18 19 21 22 23 24 26 32
Total	48	. 391	32	1, 261	39	495	15	.26. 28	19
Inspector, bloom	48	. 81	1	48	48	39	39	1.00	39
Inspectors, rail	48 48	1,214	1	42 48	42 48	31 58	31 58	0.88 1.00	35 58
Total	48	. 99	2	90	45	89	45	1, 88	47
Iron wheelers	48 48 48	.55 .73 (a)	2 3 2	67 130 (a)	34 43 (a)	36 94 87	. 31 44	1.40 2.71 (a)	20 35 (a)
Total	48	(b)	7	(b)	(b)	217	31	(b)	(6)
Laborers	48 48 48 48 48 48 48 48 48	.331 .361 .441 .461 .504 .502 .521 .55	3 1 2 5 81 9 6 4 1 2	9 52 114 205 2,138 411 179 154 59 117	3 52 57 41 26 46 30 39 59	3 19 51 96 1,042 207 93 84 35 95	1 19 26 19 13 23 16 21 35 48	0. 19 1. 08 2. 38 4. 27 44. 54 8. 56 3. 73 3. 21 1. 23 2. 44	10 18 21 22 23 24 25 26 28
Total	48	. 50	114	3, 438	30	1, 725	15	71. 63	24
Laborer and rail breaker Laborer and weighman Lathemen	48 48 48	(a) .511 .55	1 1 4	(a) 58 186	(a) 58 47	21 30 103	21 30 26	(a) 1. 21 3. 88	(a) 25 27
Loaders	48 48	.55 (a)	5 2	(a)	18 (a)	49 174	10 87	1,85 (a)	(a) 26
Total	48	(b)	7	(b)	(b)	223	32	(b)	(6)
Loaders and weighmen	48 48 48 48 48 48	. 354 . 569 . 69 . 82 . 98 1. 02 (a)	1 2 1 1 1 2	45 96 106 11 48 48 (a)	45 48 53 11 48 48 (a)	16 51 73 9 47 49 154	16 27 37 9 47 49 77	0.94 2.00 2.21 0.23 1.00 1.00 (4)	17 27 33 39 47 49
Total	48	(6)	10	(b)	(b)	402	40	(6)	(6)
Masons	48 48	.73 .81	4	201 56	50 56	147 46	37 46	4. 19 1. 17	35 39

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for the reason shown in the preceding footnote.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel: GREAT BRITAIN—Continued.

ESTABLISHMENT No. -. - Continued.

	Work.	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had nuons yment.
Occupation.	days in the period.	nearest	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Consequent
II.		daily earn- ings.	em- ploy- és.	Total	Aver- age.	Total.	Average.	em- ployés.	average earning per em- ployé.
Blacksmiths' strikers	156 156	\$0. 81 . 85	3	480 188	160 188	\$390 162	\$130 162	3. 08 1. 21	\$12 13
Total	156	. 823	4	668	167	552	138	4. 29	12
Bloomers	156 156	1.35	2 2	215 229	108 115	200 84	145 42	1.38 1.47	210
Bogie men	156 156 156 156 156	1.021 1.101 1.35 1.44 1.521	2 2	119 354 215 215 135	119 118 108 108 135	122 302 290 310 206	122 131 145 155 206	0.76 2.27 1.38 1.33 0.87	16 17: 21: 22: 23:
Total	156	1, 27	9	1, 038	115	1,329	147	6.66	19
Bogie men's helper Boilermakers Boilermen	156 156 156	1. 034 1. 064 1. 124	1 2 6	135 410 959	135 205 160	140 436 1, 078	140 218 180	0. 87 2. 63 6. 15	16 16 17
Boilersmiths	156 156 156	1.34 1.40 1.48	1 1 1	186 182 160	186 182 160	252 252 237	252 252 237	1.19 1.17 1.03	21 21 23
Total	156	1.40	3	528	176	741	247	3. 39	219
Carpenter	156	1. 26	1	149	149	188	188	0. 96	19
Catchers	156 156 156	1.38 1.534 1.604	2 2 2	220 270 215	115 135 108	318 414 345	158 207 173	1.47 1.73 1.38	21: 23: 25:
Total	156	1.50	_	714	119	1,075	179	4.58	23
Catchers' helpers	156 156	1. 19	1 2	135 229	135 115	132 274	132 137	0.87 1.47	15:
Total	156	1.11	3	364	121	406	135	2.34	17
Chargers	156 156	.87 .994	2 2	278 297	139 149	240 293	120 147	1.78 1.90	13: 15:
Total	156	. 92	4	575	144	533	133	3.68	14
Clippers	156 156	1.011	2 2	222 274	111 137	225 262	113 141	1.42 1.76	156 163
Total	156	1.02	4	496	124	507	127	3.18	150
Cranemen	156	1. 24	2	336	168	417	209	2.15	19
Cutters-down	156 156 156 156	1. 113 1. 404 1. 604 1. 74	1	131 130 133 133	131 130 133 133	153 181 211 229	152 181 211 229	0, 84 0, 83 0, 85 0, 85	18: 21: 24: 26:
Total	156	1. 464	4	527	132	773	193	3. 37	225
Engine drivers	156	1.00	3	543	181	593	198	3.48	170
Enginemen	156 156 156	. 85 1. 041 1. 17	2 2 2	322 277 251	161 139 126	274 290 294	137 145 147	2.06 1.78 1.61	133 163 183

TABLE XII—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

Q.-Mixed Iron and Steel: GREAT BRITAIN-Continued.

ESTABLISHMENT No. -. - Continued,

	Work-	unity		ctual co	ndition	for peri	od.	work	ition if wen had inuous syment.
Occupation.	ing days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy- 6s.	Total	Aver- age.	Total.	Aver- age.	em- ployés.	per em- ployé.
Fettlers and slag wheelers Firemen, boilers Firemen, furnace Firemen, locomotive	156	\$0.90 .931 .991	2 2 2 3	320 346 300 565	160 173 150 188	\$288 323 296 504	\$144 162 148 168	2. 05 2. 22 1. 92 3. 62	\$140 146 154 139
Fitters	156 156	1.32 1.36	1 3	206 596	206 199	273 810	273 270	1. 32 3. 82	207 212
Total	156	1.35	4	802	201	1, 083	271	5.14	211
Forkers	156 156 156	1. 43 1. 46 2. 08	1 4 4	147 386 481	147 97 120	208 558 1,001	208 140 250	0. 94 2. 47 3. 08	221 226 325
Total	156	1. 74	9	1,014	113	1, 767	196	6.49	272
Gas producers	156 156 156 156	1.091 -971 -81 -971	1	143 180 166 316	72 180 166 158	157 178 140 308	79 178 140 154	0. 92 1. 15 1. 06 2. 93	171 154 132 155
Heaters.ees	156 156 156 156	1. 73½ 2. 07 4. 17½ (a)	2 2 2 1	172 253 221 (a)	86 127 111 (a)	208 524 923 475	149 262 462 475	1.10 1.62 1.42 (a)	270 322 651 (a)
Total	156	(6)	7	(6)	(b)	2, 220	317	(6)	(6)
Heaters' helpers	156	. 48	6	646	108	314	52	4.14	76
Holders-up	156 156	1. 683 2. 54	1 4	117 481	117 120	196 1, 223	196 306	0.75 3.08	261 397
Total	156	2. 37	5	598	120	1, 419	284	3, 83	370
Inspectors	156	1. 21	2	265	133	322	161	1, 70	190
Laborers	156 156 156	.81 .85 .97	3 2 1	555 125 207	185 63 207	450 106 202	150 53 202	3.56 0.80 1.33	126 132 156
Total	156	. 85	6	887	148	758	126	5. 69	133
Loaders	156 156	1.28	4	215 425	108 106	212 547	106 137	1. 38 2. 72	154 201
Total	156	1. 18	6	640	107	759	127	4 10	185
Markers	156 156	1. 981 2. 795	1 4	144 481	144 120	283 1, 344	283 336	0. 92 3. 08	307 436
Total	156	2 60	5	625	125	1,627	325	4.00	400
Millwrighta	156 156	1. 31 1. 48	1	148 215	148 215	194 319	194 319	0. 95 1. 38	204 231
Total	156	1.41	2	363	182	513	257	2. 33	220
Millwrights' laborers	156 156 156	.81 .89 .97	1 1 1	223 243 183	223 243 183	181 217 180	181 217 180	1. 43 1. 56 1. 17	127 139 153
Total	156	. 89	3	649	216	578	193	4.16	139

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. It is not total oan be made for the reason shown in the preceding footnots.



TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

Q.-Mixed Iron and Steel: GREAT BRITAIN-Continued.

ESTABLISHMENT No. -. -Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for period	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif.	Day	of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Ore fillers Ore grinder Patternmakers	156 156 156	\$0.97 <u>1</u> 1.30 1.42	2 1 2	94 179 318	47 179 159	\$91 232 450	\$46 232 225	0.60 1.15 2.04	\$151 202 221
Pilers	156 156	1.334 1.394	1	125 131	125 131	167 183	167 183	0. 80 0. 84	208 218
Total	156	1. 36}	2	256	128	350	175	1.64	214
Pinchers	156 156 156	. 975 1. 335 1. 44	3 2	215 350 215	108 117 108	210 468 310	105 156 155	1.38 2.24 1.38	152 209 225
Total	156	1. 26	7	780	111	988	141	5.00	197
Pitmen	156 156 156	(a) .971 .81	6 1 1	(a) 143 143	(a) 143 143	625 139 114	104 139 114	(a) 0.92 0.92	(a) 152 124
Puddlers	156 156 156	.85 1.47± 2.01	1	491 476 491	123 119 123	409 703 967	102 176 247	3. 15 3. 05 3. 15	130 230 314
Total	156	1.44	12	1, 458	122	2, 099	175	9.35	225
Pushers	156 156	. 971 . 951	2 2	132 307	66 154	128 292	64 146	0.85 1.97	151 148
Rollers	156 156 156 156 156 156 156 156 156 156	1. 25± 1. 44± 1. 78 1. 97± 2. 44± 2. 98± 3. 21± 4. 01 5. 28 6. 02± 8. 16± 11. 36± 12. 76±	25 55 21 31 11 11 11 11	229 699 579 229 135 343 131 131 118 111 125 109 106	115 140 116 115 135 114 131 131 118 111 135 109 106	288 1, 010 1, 031 452 330 1, 023 421 525 623 669 1, 102 1, 239 1, 353	144 202 205 226 330 341 421 525 623 669 1, 102 1, 239 1, 353	1. 47 4. 48 3. 71 1. 47 0. 87 2. 20 0. 84 0. 76 0. 71 0. 87 0. 70 0. 68	196 225 278 308 381 465 501 623 824 940 1, 273 1, 773 1, 991
Total	156	3. 29	25	3, 055	122	10,066	403	19. 60	514
Rollers' helpers	156 156 156 156	.721 .97 1.101 (a)	1 4 2 (b).	128 431 215 (a)	128 108 108 (a)	93 419 238 9, 287	93 105 119 (b)	0.82 2.76 1.38 (d)	113 152 173 (a)
Total	156	(c)	(c)	(c)	(c)	10, 037	(c)	(e)	(c)
Scrap cutters' helpers	156 156	2. 081 1. 024		481 540	120 135	₹1, 002 554	251 139	3.08 3.46	325 160
Shearmen	156 156 156 156	. 93 2. 86 5. 43 5. 69	2 1 2 2	329 142 258 217	165 142 129 109	306 406 1, 401 1, 236	153 406 701 618	2.11 0.91 1.65 1.39	145 446 847 889

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b Number of employés not given.
c No total can be made for reasons shown in the preceding footnotes.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued Q.—Mixed Iron and Steel: GERAT ERITALE—Continued.

ESTABLISHMENT No. - - Concluded.

	Work-	l danz	4	otzal oc	edition	ı for peri	rt.	weeks	ition if non had income symmetric
Quenpation.	days in the period.	rate mearest to average	Dif-	Day:	4	Zarn	aga.	Noose-	Conse- quest
		dally cara- tags.	em- ploy- 44.	Total.	Aver-	Total.	Aver-	ployés.	errates per em- ployé.
Shinglere	156 156 156	\$1.704 2.376 2.76	1 1 1	130 130 130	130 130 130	\$221 300 350	\$221 300 350	0.83 0.83 0.83	9285 871 431
Total	156	2.28	3	200	130	889	296	2.49	386
Slagmen	156 156	. 79 . 974	2 2	254 96	127 49	200 96	100 48	1. 63 0. 63	123 153
Total	156	.84	4	352	88	296	74	2. 26	131
Smelters	156 156	(a) .97½	18	(a) 269	(a) 185	2, 497 242	194 131	(a) 1.72	(6) 183
Sweepers	156 156 156 156	. 90 97 1. 00 1. 10	2 2 2 2	229 215 270 215	115 108 135 165	214 210 280 238	107 105 140 119	1.47 1.38 1.73 1.88	146 189 168 178
Total	186	1.01	8	929	116	943	118	5.96	180
Teemer	156 186 186 156 156 156 156	(6) .931 .78 1.11 1.82 4.76 .48	1111122	(e) 167 170 124 489 251 251	(a) 167 170 124 122 126 126	55 155 129 137 892 1, 196 122	55 156 129 137 223 598 61	(a) 1.07 1.09 0.78 3.13 1.61 1.61	(e) 145 118 172 285 743 76
Wheelers	158 156 156 156 156 156	1.034 1.074 1.074 1.094 1.134 1.214	1 1 6	705 318 144 124 911 417	118 157 144 124 152 104	654 825 155 135 1,043 504	109 163 155 135 174 126	4. 52 2. 01 0. 92 0. 79 5. 84 2. 67	145 162 168 170 179 180
Total	156	1.07}	20	2, 614	131	2, 816	141	16.75	166
The establishment		(8)	(8)	(6)	(6)	66, 433	(b)	(6)	(6)

ESTABLISHMENT No. -

[No statement of cost of production for mixed iron and steel is shown in Part I.]

Ashmen :	3 3 3 3	90.541 .67 .80 .71	1 2 1	232 53 71 50	58 83 36 50	\$131 35 49 35	\$33 35 25 35	4.38 1.00 1.34 0.94	2. 3. 3.
Total	53	. 61 1	8	406	51	250	31	7. 60	81
Blacksmiths	53 53 53	.67 .71 .88	1	48 201 64	48 50 68	32 143 60	72 36 60	0.91 3.79 1.28	31 34 47
Total	53	.74	0	817	53	235	39	5. 98	31
Blackamitha' atrikersBloomers	53 53 58	. 53 <u>)</u> (e) (a)	10 5 6	458 (a) (a)	46 (a) (c)	244 329 414	24 64	8. 60 (4) (4)	(e) (e)

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. b No total can be made for reasons shown in the preceding fuotnotes.

TABLE XII .- ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. Q .- Mixed Iron and Steel: GREAT BRITAIN-Continued.

ESTABLISHMENT No. - - Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ndition	for perio	od.	works	ition if nen had nuous oyment.
Occupation.	days in the period.	rate Dearcet to average	Dif- ferent	Day		Earni	oga.	Neces-	.Consequent
		daily carn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	sary em- ployés.	earnings per em- ployé.
Boiler scalers	53 53	\$0.61 .63	1	60 51	60 51	\$36 32	\$36 32	1.13 0.96	\$32 33
Total	53	. 61	2	111	56	68	34	2.09	32
Bottom builders Casting dresser Chargers Checker Chillmen	53 53 53 53 53	(a) .01 (a) .69 (a)	4 1 5 1 34	(a) 55 (a) 58 (a)	(a) 55 (a) 58 (a)	175 34 198 40 1,490	44 34 40 40 44	(a) 1.04 (a) 1.09 (a)	(a) (a) 33 (a) 37 (a)
Chippers	53 53 53	. 54½ . 69 . 81	5 3 1	270 109 30	54 36 39	147 75 31	29 25 31	5. 09 2. 06 0. 74	29 36 42
Total	53	. 603	9	418	46	253	28	7. 89	32
Cinder wheelers	53 53	.73 .505	2 2	112 84	56 42	82 45	41 23	2.11 1.58	39 28
Coachers	53 53	.59 (a)	3 17	151 (a)	50 (a)	90 772	30 45	2.85 (a)	(4) 32
Total	53	(b)	20	(b)	(b)	862	43	(b)	(6)
Coke collectors	53	.44	2	100	50	48	24	1,89	25
Cranemen	53 53 53 53 53 53 53	.341 .404 .544 .59 .01 .73 (a)	1 10 4 2 7 1 8	48 437 206 68 316 64 (a)	48 44 52 49 45 64 (a)	17 176 111 56 193 47 269	17 18 28 28 27 47 45	0.91 8.25 3.89 1.85 5.96 1.21 (a)	19 21 29 30 32 39 (4)
Total	53	(b)	31	(b)	(6)	868	28	(b)	(8)
Crop-end men Cupola fettlers and helpers Cupolaman	53 53 53	(a) .73	(c) 1	250 (a) 52	42 (a) 52	109 138 38	18 (e) 38	4, 72 (a) 0. 98	(a) 23
Doggers	53 53	:484 :77	7	256 182	37 46	124 140	18 35	4. 83 3. 43	26 41
Total	53	. 601	11	438	40	264	24	8.26	32
Drill filers	53	. 59	3	160	53	94	31	3.02	31
Drillers	53 53	. 57 (a)	11 3	616 (a)	56 (n)	356 106	32 35	11.62 (a)	(a) 31
Total	53	(b)	14	(6)	(b)	462	33	(b)	(6)
Drillers' helpers	53 53	. 50½ (a)	14 3	687 (a)	49 (a)	350 91	25 30	12,96 (a)	(a) ²⁷
Total	53	(6)	17	(b)	(b)	441	26	(b)	(b)
Engineers, blast	53 53	.57 .81	2 2	105 120	53 60	60 97	30 49	1.98 2,26	30 43
Total	53	.70	4	225	56	157	39	4.24	37

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the preceding footnote.
c Number of employée not given.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.-Mixed Iron and Steel: GREAT BRITAIN-Continued.

ESTABLISHMENT No. -. - Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ondition	for perio	od.	works	ition if nen had innous syment.
Occupation.	days in the period.	rate noarest to average	Dif- ferent	Day	s of done.	Earni	ngs.	Neces-	Conse- quent average
*		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Aver-	sary em- ployés.	earnings
Engineers, bloom Engineers, condensing	53 53	\$0.81 .61	2 2	119 107	50 54	\$95 65	\$48 33	2. 25 2. 02	\$45 33
Engineers, crane	53 53	.34½ .61	2	94 21	47 21	32 13	16 13	1.77 0.40	- 18 33
Total	53	. 39	3	115	38	45	15	2.17	21
Engineers, crop-end	53	.24	2	108	54	27	14	2.04	13
Engineers, drill	53 53 53	. 304 . 544 . 57	1 1 2	21 2 110	21 2 55	7 1 62	7 1 31	0.40 0.04 2.08	18 27 30
Total	53	. 52}	4	133	33	70	18	2. 52	25
Engineers, fan Engineer, foundery Engineers, bydraulic Engineer, lathe	53 53 53 53	.57 .30§ .61 .63	2 1 3 1	127 43 123 69	64 43 41 69	72 13 77 44	36 13 26 44	2. 40 0. 81 2. 32 1. 30	30 16 33 34
Engineers, press	58 58	.301 .57	1	47 60	47 60	14 34	14 34	0, 89 1, 13	16 30
Total	53	.45	2	107	54	48	24	2.02	24
Engineers, pump	53	. 67	2	120	60	81	41	2, 26	36
Engineers, rail mill	53 53	.75 .91	2 2	100 120	50 60	74 107	37 54	1. 89 2. 26	39 47
Total	53	. 824	4	220	55	181	45	4. 15	44
Engineers, rolls	53 53 53	.38½ .48½ .61	2 4 1	110 219 62	55 55 62	43 107 38	22 27 38	2.08 4.13 1.17	21 26 32
Total	53	.48	7	391	56	188	27	7.38	25
Engineers, saw	53 53	. 504	1 2	48 128	48 64	24 92	24 46	0, 91 2, 42	27 38
Total	53	. 66	3	176	59	116	39	3. 33	35
Engineer, shear Engineer, shop	53 53	. 65 . 36)	1	57 59	57 59	37 21	37 21	1.08 1.11	34 19
Engineers, triangle	53 53	. 484 . 501	1	44 50	44 50	21 25	21 25	0.83 0.94	25 27
Total	53	. 49	2	94	47	46	23	1.77	26
Filers	53	, 61	8	407	51	247	31	7.68	32
Fitters	53 53 53 53 53	.50 .65 .67 .71	1 1 3 14 1	42 74 167 763 49	42 74 56 55 49	25 48 112 542 40	25 48 37 39 40	0.79 1.40 3.15 14.40 0.92	32 34 36 38 43

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. Q.—Mixed Iron and Steel: GREAT BRITAIN—Continued.

ESTABLISHMENT No. — - Continued.

-	Work-	Actual daily earn- inge, or daily		ctual co	ndition	a for peri	nd.	works	ition if nen had inneue yment.
Occupation.	days in the period	rate nearest to average	Dif-	Day work o		Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- ée.	Total.	Aver-	Total.	ATO.	sary em- ployés.	earnings per em- ployé.
Foreman. Foreman, assistant. Foreman, blacksmiths Foreman, drillers Foreman, itura Foreman, itura Foreman, itura Foreman, pahouse Koreman, haulers Foreman, laborers Foreman, nasons	53 53 58 58 53 53 53 53 53	\$1. 46 .81 1. 171 1. 091 2. 84 1. 211 .85 .81 .89 1. 821	111111111111111111111111111111111111111	48 48 48 48 48 129 48 76	48 48 48 48 48 48 65 48 76	\$70 39 56 53 136 58 109 39 70 88	\$70 39 56 53 136 58 55 39 70	0. 91 0. 91 0. 91 0. 91 0. 91 0. 91 2. 43 0. 91 1. 43	877 43 82 50 150 64 45 43 49
Foremen, mill	53 53	2. 63 (a)	1 2	48 (a)	48 (a)	97 185	97 93	0.91 (a)	107
Total	53	(b)	3	(b)	(b)	282	94	(b)	(b)
Foreman, moulders Foreman, rail bank Foreman, roil turners Foremen, stokers Gaggers Gagger and straightener. Gas producers Gas reversors. Gaugers	53 53 53 53 53 53 53 53	1. 62 1. 42 1. 941 (a) (a) (a) . 63 . 501 . 401	1 1 2 12 12 16 2 2	48 48 (a) (a) (a) 960 119 81	48 48 48 (a) (a) (a) 60 60	78 68 93 148 587 97 615 50 33	78 68 93 72 49 97 38 30	0, 91 0, 91 0, 91 (a) (a) (a) 18, 11 2, 23 1, 53	(a) (a) (a) (a) (a) 24 22
Grinders	52 53 53 53	.241 .30 .50 (6)	2 2 1 6	29 95 67 (a)	15 48 67 (a)	7 29 33 379	15 23 63	0.55 1.79 1.26 (a)	13 16 24 (a)
Total	53	(b)	11	(b)	(b)	448	41	(b)	(8)
Haulers	53 53 53	. 40) . 46) . 54)	1 6 2	53 264 108	53 44 53	22 123 56	22 21 28	1. 00 4. 98 1. 94	22 25 29
Total	53	. 48	•	420	47	201	22	7. 92	25
Heaters	53	(a)	20	(6)	(a)	1, 140	57	(a)	(6)
Heaters' helpers	58 53 53	. 484 . 59 . 67 (a)	3 1 8 7	145 47 330 (a)	48 47 41 (6)	71 28 220 237	24 28 28 24	2. 74 0. 89 6. 23 (a)	26 32 35 (a)
Total	53	(6)	19	(b)	(b)	556	29	(6)	(b)
Helver	53	.63	1	43	48	30	30	0. 91	22
Hookers	53 53 53	. 54 <u>}</u> . 59 . 63	2 2 2	111 193 197	56 52 54	61 61 67	31 31 34	2. 00 1. 64 2. 02	29 21 21
Total	63	. 50	6	821	54	189	32	6.05	31
Hot-bank men	53 53	. 60 (a)	10 10	256 (a)	26 (a)	175 4 69	18 47	4. 83 (a)	(a)
Total	58	(b)	20	(6)	(6)	644	32	(6)	(6)

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

b No total can be made for the reason shown in the preceding feetnets.

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS -- Continued. · Q.-Mixed Iron and Steel: GREAT BRITAIN-Continued.

ESTABLISHMENT No. - .- Continued,

53 53 53 53 53 53 53 53 53 53 53	daily earn- ings. 30, 263 . 345 . 345 . 505 . 525 . 544 . 509 . 61	Dif- ferent em- ploy- 6s.	Total.	Average.	Earni Total.	Average.	Neces- sary em- ployés.	
53 53 53 53 53 53 53 53 53	daily earn- ings. 30, 263 . 345 . 345 . 505 . 525 . 544 . 509 . 61	em- ploy- és.	56 109	age.	-		em-	average earnings
53 53 53 53 53 53 53 53 53	.344 .304 .446 .504 .525 .544 .59	1 6	109		***	-	ployés.	
58	. 67	13 11 3 3	247 757 507 608 535 160 121	55 43 41 27 42 47 49 53 40	\$15 39 16 110 381 266 335 315 98 80	\$15 20 16 18 14 22 26 29 33 27	1.06 2.06 0.81 4.66 14.28 9.57 11.47 10.09 3.02 2.28	\$14 19 20 24 27 26 29 31 32 35
	. 521	80	3, 143	39	1, 655	21	59.30	28
53	(4)	1	(4)	(a)	204	51	(a)	(a)
53 53	,50½ (a)	(6)	108 (a)	38 (a)	54 389	18 (b)	2.04 (a)	(a) 27
53	(c)	(c)	(e)	(c)	443	(c)	(0)	(e)
53	(a)	1	(a)	(a)	42	42	(a)	(a)
53 53 53 53	.63 .73 .77 .81	3 4 1 1	143 228 55 66	48 57 55 66	90 167 42 54	30 42 42 54	2.70 4.30 1.04 1.25	33 39 40 43
53	.715	9	492	55	353	39	9. 29	38
53 53 53 53	. 541 . 57 (a) . 71	7 2 6 2	400 150 (a) 133	57 73 (a) 67	200 85 271 94	31 43 45 47	7.55 2.83 (4) 2.51	29 30 (a) 37
53 53 53 53 53	.301 .484 .72 .83 (4)	1 3 1 8	60 52 76 63 (a)	60 52 25 63 (a)	18 23 54 52 533	18 25 18 52 67	1. 13 0. 98 1. 43 1. 19 (a)	18 25 38 44 (a)
53	(c)	14	(c)	(e)	682	49	(e)	(c)
53 53 53 53 53 53	.81 .89 (a) .244 .59	1 13 2 1 2	54 53 (a) 56 41 99	54 53 (a) 28 41 50	43 47 455 14 24 56	43 47 35 7 24 28	1.02 1.00 (a) 1.06 0.77 1.87	(a) 13 31 30
53 53	.341	2 4	88 177	44	32 72	16 18	1.66 3.34	19 22
53	.39	6	265	44	104	17	5.00	21
53	. 63	4	158	47	116	29	3.55	33
53 53 53 53 53 53	. 481 . 511 . 63 . 67 . 69	2 2 1 1 1 2	67 110 72 54 54 96	34 55 72 54 54 48	34 61 45 36 37 105	17 31 43 36 37 53	1. 26 2. 03 1. 36 1. 02 1. 02 1. 81	27 29 33 35 36 58
	53 53 53 53 53 53 53 53 53 53 53 53 53 5	53 (a) 53 .71 53 .301 53 .465 53 .62 53 (c) 53 (c) 53 (d) 53 .81 53 .89 53 (d) 53 .59 53 .245 53 .59 53 .69 53 .69	53 (a) 6 53 .71 2 53 .304 1 53 .464 1 53 .72 3 53 .83 1 53 (a) 8 53 (c) 14 53 .81 1 53 .89 1 53 .89 1 53 .246 2 53 .59 1 53 .57 2 53 .59 1 53 .59 6	53 (a) 6 (a) 53 .71 2 133 53 .304 1 60 53 .484 1 52 53 .72 3 76 53 .83 1 63 53 (a) 8 (a) 53 (a) 1 60 53 .81 1 54 53 .81 1 54 53 .89 1 53 53 (a) 13 (a) 53 .244 2 66 53 .59 1 41 53 .57 2 90 53 .59 1 41 53 .57 2 88 53 .404 4 177 53 .345 2 67 53 .345 2 188 53 .484 2 67 53 .59 6 265 53 .63 4 188 53 .484 2 67 53 .59 6 265 53 .63 1 72 53 .63 1 72 53 .63 1 72 53 .63 1 72 53 .63 1 72 53 .63 1 72 53 .63 1 72 53 .63 1 74 53 .69 1 54 53 .69 1 54 53 1.092 2 96	53 (a) 6 (a) (a) 53 (71 2 133 67 53 .304 1 60 60 53 .488 1 52 52 52 53 .83 1 63 63 63 63 63 64 64 65 65 65 65 65 65 65 65 65 65 65 65 65	53 (a) 6 (a) (a) 271 53 .71 2 133 67 94 53 .304 1 60 60 18 53 .484 1 52 52 23 53 .72 3 76 25 54 53 .83 1 63 63 53 53 (a) 8 (a) (a) 533 53 .81 1 54 54 42 53 .89 1 53 53 47 53 (a) 13 (a) (a) 455 53 .59 1 41 41 24 53 .59 1 41 41 24 24 32 34 34 34 32 34 44 32 34 44 32 34 34 34 34 34 34 3	53 (a) 6 (a) (a) 271 45 53 .71 2 133 67 94 47 53 .304 1 60 60 18 18 53 .484 1 52 52 25 25 53 .484 1 52 52 25 25 53 .483 1 63 63 52 52 53 53 .83 1 63 63 52 52 53 53 (a) 8 (a) (a) 533 67 53 .81 1 54 54 43 43 43 53 .89 1 53 53 47 47 47 53 53 47 47 47 53 53 241 24 24 24 24 24 24 24 24 24 24	53 (a) 6 (a) (a) 271 45 (a) 53 .71 2 133 67 94 47 2.51 53 .304 1 60 60 18 18 1.1 52 52 23 25 0.98 53 484 1 52 52 23 25 0.98 53 1.43 53 53 52 52 1.19 53 53 67 1.19 63 53 52 52 1.19 67 (a) 533 67 (a) 53 67 1.19 60 60 18 18 1.43 63 53 52 52 1.19 60 60 18 18 1.43 1.43 63 63 52 52 1.19 60 60 18 18 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43 1.43

e Paid by the quantity. The daily rate of pay and days of work done cannot be gives. b Number of employee not given.
c No total can be made for reasons shown in the preceding footnotes.



TABLE XII, -ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. Q.-Mixed Iron and Steel: GREAT BRITAIN-Concluded.

ESTABLISHMENT No. — - Concluded.

·	Work-	Actual daily earn-ings,or daily	A	otual co	ndition	a for peri	od.	work	ition if non had nuous yment.
Occupation.	days in the period.	TRIG DEAFEST to AVETAGE	Dif.	Day work		Earni	ngs.	Neces	Conse- quent
		daily earn- ings.	ploy-	Total.	age.	Total.	Aver- age.	eary em- ployés.	earnings per em- ployé.
Rollers	58 53 53 53	(a) \$0.36} (a) .75	15 6 2 1	(a) 186 (a) 125 48	(a) 47 (a) 63 48	\$1, 049 68 198 94 14	\$70 17 38 47 14	(a) 8.51 (a) 2.36 0.91	(a) \$19 (a) 40 15
Shearmen,	53 58	.441	1 2	18 74	18 87	8	8 23	0. 84 1. 40	24 45
Total	58	. 77	3	92	81	71	24	1.74	41
Spare hands	58 58 53	.48 .66 (a)	19 28 47	665 861 (a)	3£ 31 (a)	320 509 1, 574	17 20 33	12.55 16.25 (a)	26 35 (a)
Total	58	(6)	94	(8)	(b)	2, 463	26	(b)	(8)
Stamper	53	.57	1	49	49	26	28	0.92	30
Stookers	53 58 53	. 50) . 59 (a)	68 8 8	2, 585 475 (a)	38 59 (4)	1, \$16 287 181	19 36 23	48.77 8.94 (a)	. 27 . 22 (a)
Total	58	(6)	84	(b)	(b)	1, 784	21	(ð)	(6)
Stokers	53 53 53	. 601 67 78	8 45	122 134 1,726	15 17 88	74 99 1, 256	9 11 28	2.30 2.53 82.57	22 35 30
Total	52	.71	61	1, 962	32	1,419	23	37. 40	36
Stopper setters	53	. 32}	3	174	58	56	19	3. 28	17
Stoppermakers	53 58	. 54½ (a)	(e) 8	101 (a)	34 (a)	55 34 0	18 (c)	1.91 (a)	(a) 29
Total	53	(b)	(b)	(6)	(b)	395	(b)	(8)	(6)
Straightaners	58 58 53 58 58 53	(a) · 44½ (a) (a) · 77 (a) · 52½	12 4 1 4 1 18	(a) 168 (a) (a) 24 (a) 56	(a) (a) (a) (a) (a) 56	727 75 76 198 18 919	61 19 76 50 18 51	(a) 8.17 (a) (a) 0.45 (a) 1.06	(a) (a) (a) (b) (c) 24
Weighmen	58 58 53	.844 .57 .81	2 1 2	71 48 104	86 48 52	24 27 84	12 27 42	1. 34 0. 91 1. 96	18 30 43
Total	53	. 60)	- 5	223	45	135	27	4.21	
The establishment	•••••	(b)	(b)	(6)	(b)	80, 593	(6)	(b)	(6)

s Paid by the quantity. The daily rate of pay and days of work done cannot be gives.
b No total can be made for reasons shown in the preceding footnotes.
s Number of employée not given.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. B.-Bitumiuous Coni: UNITED STATES.

ESTABLISHMENT No. 18.

	Work-	GENTA		Actual co	mditio	a for peri	eL.	Condition if workmen had esptiment employment.		
Occupation.	days in the period.	rate nearest to average	DIF-	Day work	eľ ione.	Eerni	lags.	Neoco-	Cunco-	
		dally earn- ings.	ploy-	Total.	Aver-	Total	Aver-	ployés.	bode bot on- estanglis sacrado	
Blacksmith	158	\$2.00	1	158	158	\$316	\$316	106	9834	
Cagemen	158 158	1. 661 1. 75	1 2	108 204	108 102	181 366	181 178	0.66 1.29	205 276	
Total	158	1.73	3	812	104	537	179	L. 97	272	
Carpenter	158	2.00	1	152	152	304	204	0.36	810	
Drivers	158 158	1.25 1.50	1 7	50 8 01	50 114	62 1, 185	62 180	6. 22 5. 07	196 234	
Total	158	1.46	8	851	106	1, 247	158	5. 89	222	
Dumpers Engineers, hoisting Fireman Foreman, laborers Laborers	158 184 184 158 158 184 168	1.50 2.16 1.50 1.75 1.50 2.281 (4,8)	2 2 1 1 2 1 176	291 368 171 171 287 184 (b)	146 184 171 171 144 184 (b)	437 795 259 299 431 420 430, 305	219 306 259 290 216 4:0 172	1.84 2.00 0.93 1.08 1.82 1.00 (b)	237 236 271 276 307 620 (b)	
Roadman	158 158	1.50 1.75	9	1, 453 178	161 178	2, 164 313	340 813	9. 50 1. 13	225 277	
Total	158	1.52	10	1, 631	163	2, 476	248	10. 33	249	
TracklayerTrappersTrimmerWeighman	158 158 158 158	1.75 .87 1.75 1.75	1 2 1 1	143 305 150 154	143 153 159 154	251 267 277 269	251 134 277 269	0. 91 1. 93 1. 01 0. 97	277 138 275 276	
The establishment	•••••	(c)	213	(e)	(c)	d 38, 890	183	(e)	(0)	

ESTABLISHMENT No. 26.

Blacksmith	313	\$2.40	1	202	202	\$485 290	\$485	0.65	\$732
Blacksmith's helper and pipe fitter.	813	1. 83	1	213	213	390	390	0. 68	573
Risstors	813	2.00	6	225	38	454	76	0. 72	633
	313	2.10	2	134	67	279	140	0. 43	663
Total	313	2.04	8	359	4.5	733	92	1. 15	(3)
Blaster and driller	813	2. 10	1	129	129	271	271	0.41	658
Risaters and loaders	313	1. 98	4	246	62	487	123	0.79	(2)
Blaster and watchman	313	1.77	1	169	169	299	209	0. 54	554
Careman and driver	313	1. 921	1	163	163	314	314	0. 52	60 I
Cagemen and loaders	313	1.90	2	289	145	549	275	0. 92	504
Carpenter	313	1.50	1	61	61	92	92 :	0. 19	472
Carpenter and dumper	313	1. 571	1	193	193	304	304	0. 62	400
Cutters	313	2.25	8	901	113	2,065	261	2.88	724
04444	313	2.50	4	303	76	750	188	0.97	773
ı	813	2.75	1	8 !	8	22	22 (0. 93	961
Total	313	2. 354	13	1, 212	93	2, 857	220 ;	3. 86	738

s From the earnings here given miners bought their own supplies at a cost of 48 cents per weak.

b Paid by the quantity. The daily rate of pay and days of work done cannot be given.

c No total can be made for the reason shown in the preceding footnote.

d In addition, \$434 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 209.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.—Bituminous Coal: UNITED STATES—Continued.

ESTABLISHMENT No. 26-Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	work	ition if men had inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
•		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Cutters and cutters' helpers	313	\$2.04	3	431	140	\$860	\$287	1, 35	\$639
Cutters' helpers	313 313	1.80 2.00	13 2	840 65	65 33	1, 523 131	117 66	2.68 0.21	567 631
Total	313	1.83	15	905	60	1,654	110	2.89	572
Cutters' helper and driver	313	1.53	1	141	141	216	216	0, 45	479
Cutters' helpers and loaders	313 313	1.86	4	286 23	72 23	532 48	133 48	9.91 0.07	582 653
Total	313	1. 874	-	309	62	580	116	0.98	588
Driller	313	2.00	1	6	6	12	12	0.02	626
	1 32	1.25	1133	19	1.34	23	23		1
Drivers	313	2.00	3	149	19 50	295	98	0.06	379 620
Total	313	1.89	4	168	42	318	80	0.54	591
Drivers and loaders	313 313 313 313 313	1.514 1.434 1.725 1.72	1 1 1 1	176 83 167 317 301	88 82 167 317 301	267 119 288 545 428	134 119 288 545 428	0, 56 0, 27 0, 53 1, 01 0, 96	475 449 540 538 445
Laborers	313 313	1.00 1.25	2 2	46 110	23 55	46 137	23 60	0.15 0.35	313
Total	313	1. 175	4	156	39	183	46	0.50	367
Laborer and loader	313	1, 62	1	131	131	212	212	0.42	501
Loaders (4)	313 313	1.75	2 65	121 2, 376	61	210 4, 440	105 68	0.39 7.59	543 583
Total	313	1.86	67	2, 497	37	4, 650	69	7.98	583
Loader and teamster Loaders and timbermen Loader and trapper Loader and watchman Mine bosses Pumpman	313 313 313 313 313 313	1. 68 1. 965 1. 315 1. 69 1. 915 1. 325	1 4 1 1 2 1	78 169 143 26 373 3	78 42 143 26 187 3	131 332 188 44 717	131 83 188 44 359	0. 25 0. 54 0. 46 0. 08 1. 19 0. 01	526 613 413 530 603 413
Teamsters	313 313	1.15	1	84 43	84 43	101 53	101 53	0. 27 0. 14	376 386
Total	313	1. 213	2	127	64	154	77	0.41	380
Timbermen	313 313	2.00 2.10	5 3	284 166	57 55	575 345	115 115	0. 91 0. 53	634 631
Total	313	2.04	8	450	56	920	115	1.44	610
Tracklayers	313 313	2.25 .80	2 2	222 273	111 137	486 216	243 108	0.71 0.87	685 246
Trimmers	313 313	1. 25 1. 50	1 4	17 331	17 83	22 438	22 122	0. 05 1. 06	405
Total	313	1.46	5	348	70	510	102	1.11	459

[«] This being a machine mine the loaders here take the place of miners in other establishments. Loaders, as well as all inside employés, pay 25 cents per week for oil.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.-Bituminous Coal: UNITED STATES-Continued.

ESTABLISHMENT No. 96-Concluded.

	Work-	ing anny		otual co	adition	for peck	ıL.	Condition if workmen had continuous comployment.	
Occupation.	days in the period.	nearest to	Dif-	Days work	of lone.	Barni	egr.	Neces-	Conse- quent
•	İ	daily earn- inge.	ploy.	Total	Aver-	Total.	Aver-	ployés.	bjeler bet em- estajaka szetako
Watchman	305	\$1.21	1	53	53	\$61	961	8.15	9441
Weighmen	313 313	1.00 1.72}	1	15 313	15 313	15 540	15 540	0.06 1.00	313 540
Total	813	1.60	2	328	164	565	278	1.05	530
The establishment		1.81}	173	11, 607	67	a 21, 434	124	37.06	578

ESTABLISHMENT No. 55.

Dumper	313 313	\$1. 50 1. 84	1 5	50 26 7	50 53	\$75 491	\$75 98	0. 18 0. 55	\$476 876
Hanlers and tracklayers	313 313 313	1. 87 1. 95 <u>1</u> 2. 25	1 1 1	235 94 275	235 94 275	440 184 619	440 184 619	0. 75 0. 30 0. 83	585 612 785
Total	813	2.26	3	601	201	1, 243	414	1.83	044
Hanler and trimmer	313 313 313 313 313	1.401 1.50 1.00 (b. c) 2.00	1 8 1 196 1	69 15 68 (c) 269	5 68 (c) 269	103 23 68 6 17, 025 540 19	168 8 63 92 540 19	0. 22 0. 05 0. 22 (c) 0. 86 0. 14	467 400 312 (e) 628 125
Trimmers	313 313	1.00 1.50	1 2	47 291	47 146	47 449	47 225	0. 15 0. 98	313 400
Total	313	1. 46	3	338	113	496	165	1.08	450
The catablishment		(d)	205	(d)	(d)	¢ 20, 083	98	(d)	(4)

ESTABLISHMENT No. 96.

Blacksmiths	313 313	\$1.65 2.00	1 2	236 275	236 138	\$384 551	\$384 276	8, 75 8, 88	\$800 627
Total	313	1.83	3	511	170	935	312	1. 63	573
Carpenter	313	2. 66}	1	G	6	16	16	6.02	855
Drivers	313 313 313 313 313	1. 00 1. 25 1. 50 2. 00 (c)	1 1 12 13 3	19 11 412 (c)	19 11 37 (o)	23 17 892 1, 633	23 17 74 544	6. 61 0. 06 0. 04 1. 41 (c)	813 879 484 632 (e)
Total	213	(d)	18	(d)	(d)	2, 569	143	(4)	(d)

a In addition \$145 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 209.

5 From earnings here given miners bought their own supplies at a cost of 75 cents per week, e Paid by the quantity. The duily rate of pay and days of work done cannot be given.

6 No total can be made for the reason shown in the preceding footnots.

6 In addition \$1,004 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 208.

TABLE XII, -ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. R.-Bituminous Coal: UNITED STATES-Continued.

ESTABLISHMENT No. 96-Concluded.

	Work-	Actual daily earn- ings.or daily	. 4	ctual co	nditio	n for perio	od.	workt	ition if nen had inuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- forent	Day		Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.
Driver and hooker-on Engineer Fanmen Fire boss	313 313 313 313	\$1. 261 2. 00 1. 50 2. 091	1 1 3 1	171 283 310 320	171 283 103 320	\$216 565 470 671	\$216 565 157 671	0, 55 0, 90 0, 99 1, 02	\$395 625 475 656
Hookers-on	313 313	.75 1.00	2 2	103 34	52 17	82 34	41 17	0.33 0.11	249 313
Total	313	. 84	-	137	34	116	29	0.44	265
Laborers, surface	313 313 313 313	1.25 1.35 1.50 1.75	3 1 3 1	56 25 29 22	19 25 10 22	70 33 43 37	23 33 14 37	0.18 0.08 0.09 0.07	391 413 464 526
Total	313	1.381	8	132	17	183	28	0.42	434
Laborers, underground	313 313	1.75 2.00	3 9	38 69	13 8	68 137	23 15	0. 12 0. 22	560 621
Total	313	1.91	12	107	9	205	17	0.34	600
Laborer and miner Masons Miners Miners and tipplemen	313 313 318 213	(a, b) 3.00 (a, b) (a, b)	1 2 412 2	(b) (b) (b)	(b) (b) (b)	a 82 18 a 53, 613 a 552	82 9 130 276	(b) 0.02 (b) (b)	(b) (b) (b)
Pit bosses	313 313	2. 25 2. 50	1	67 189	67 189	150 473	150 473	0. 21 0. 60	701 783
Total	313	2. 43	2	256	128	623	312	0.81	762
Roadmen	313	2.00	2	518	259	1, 036	518	1, 65	626
Tipplemen	313 313	1.45 1.60	8 2	281 98	35 49	410 158	51 79	0.90 0.31	457 505
Total	313	1.50	10	379	38	568	57	1.21	469
Trappers	313	.50	15	986	66	493	33	3.15	157
Trimmers	313 313	1. 50 1. 65	3 4	103 116	34 29	151 192	50 48	0.33 0.37	459 518
Total	313	1.56	7	219	31	343	49	0. 70	490
Water hauler Weighmaster	313 318	2.00 2.00	1	20 317	20 317	40 634	40 634	0.06 1.01	626 626
The establishment		(0)	507	(c)	(c)	d 63, 948	126	(c)	(c)

<sup>From earnings here given miners bought their own supplies at a cost of 42 cents per week.
Paid by the quantity. The daily rate of pay and days of work done cannot be given.
No total can be made for the reason shown in the preceding footnote.
In addition \$4.507 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 210.</sup>

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.—Bituminous Coal: UNITED STATES—Continued.

ESTABLISHMENT No. 107.

	Working	Actual daily earn-ings, or daily	4	oteal oc	máitic	a for peri	od.	e e e e e e e e e e e e	ition if sen had knows yment.
. Occupation.	days in the period.	rate mearest to average	Dif-	Day:	of dome.	Barni	aga.	Yees.	Counc-
		daily earn- ings.	ploy-	Total	Aver	Total.	Aver-	ployes.	ecralege per em- ployé.
Blacksmith	1 919	\$1.25 1.80 2.25 1.50	1 1 1	289 182 53 56	289 182 58 55	\$650 273 118 82	\$800 273 118 82	0.92 0.58 0.17 6.18	\$794 479 607 467
Drivers	313 313 313 313	1.78 1.85 2.00 2.23	2 4 1	130 27 865 135	65 14 141 135	223 50 1, 129 301	112 25 282 201	0.43 0.00 1.81 0.43	597 580 625 606
Total	813	1. 96 ₄	9	857	95	1, 703	189	2, 75	623
Engineers	313 313	2.11 2.09	1	318 292	157 292	66 0 584	330 584	1.00 0.93	659 624
Heckers-on	313 318	1.40 1.45 <u>1</u>	1	127 159	127 150	178 221	178 281	0.41 0.51	430 455
Total	313	1.43	2	286	143	409	205	6. 92	448
Hostler	313	1,50	1	116	116	178	173	0. 37	467
Laborers	313 813 313 318	1.00 1.25 1.50 2.00	1 7 1 8	75 133 51 100	75 19 51 33	72 166 76 201	72 24 76 67	6. 24 0. 42 0. 16 0. 82	300 301 466 629
Total	813	1. 431	12	359	30	515	43	1.14	449
Mine boss Miners Miner and pumpman Miner and water boy Pit boss Pumpmen Roadmen	313 818 313 813	2. 68½ (a, b) (a, b) (a, b) 2. 50 1. 00 2. 00	255 1 1 1 2 3	183 (b) (b) (b) 130 54 216	183 (b) (b) (b) 130 27 72	490 a 29, 899 a 174 a 294 825 54 427	490 117 174 294 825 27 142	0. 58 (b) (b) (b) 0. 42 0. 17 0. 69	(b) (b) (b) (b) 783 818 619
Tipplemen	313 313 313 313 313	. 75 1. 00 1. 25 1. 50 2. 00	1 1 7 1	182 102 8 434 1	182 102 8 62 1	140 102 10 653 2	140 102 10 93	0. 58 0. 33 0. 03 1. 30 0. 00	241 313 391 471 628
Total	813	1. 25	11	727	66	907	82	2. 33	390
Water boys	313	1.75	2	180	65	227	114	0.42	547
Weighmasters	313 313	2.00 2.37	1	100 192	100 192	198 455	198 455	0. 52 0. 61	620 742
Total	313	2. 23	2	292	146	653	327	0. 93	700
The establishment		(0)	810	(c)	(c)	d 38, 617	125	(c)	(e)

⁶ From the earnings here given miners bought their own supplies at a cost of 73.5 cents per week.
5 Paid by the quantity. The daily rate of pay and days of work done cannot be given.
e No total can be made for the reason shown in the preceding footnote.
d In addition \$1.716 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 210.

PART II .- TIME AND EARNINGS.

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. R.-Bituminous Coal: UNITED STATES-Continued. ESTABLISHMENT No. 109.

	Work-	Actual daily earn- ings, or daily	4	ctual co	onditio	n for peri	od.	works	ition if nen had inuous oyment.
Occupation,	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done,	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Blacksmiths	313	\$2.15	2	511	256	\$1, 121	\$561	1.63	\$687
Carpenters	313 313 313	1.92½ 2.00 (a)	1 1	40 19 (a)	20 19 (a)	77 37 60	39 37 60	0, 13 0, 06 (a)	603 6:0 (a)
Total	313	(6)	4	(6)	(6)	174	44	(b)	(6)
Carpenter and rockman	313	2.11	í	9	9	19	19	0.03	661
Drivers	313 313 313 313 313 313	1.40 1.50 1.721 1.80 1.90 2.00	1 2 1 2 13 10	55 47 286 35 2, 301 948	55 24 286 18 177 95	77 71 495 63 4, 423 1, 901	77 86 495 32 340 190	0, 18 0, 15 0, 91 0, 11 7, 35 3, 03	438 473 542 563 602 628
Total	313	1.91	20	3,672	127	7, 030	242	11,73	599
Driver and flagman Drivers and miners Driver and trapper	313 313 313	1.03½ (a) .63½	1 2 1	146 (a) 142	146 (a) 142	151 852 90	151 426 90	0. 47 (a) 0. 45	(4) 198
Dumpers	313 313 313	1. 25 1. 35 1. 50	5 1 2	223 102 497	45 102 249	279 137 748	56 137 374	0.71 0.33 1.50	392 420 471
Total	313	1. 413	8	822	103	1,164	146	2.63	443
Engineers	313 313 313 313	2.00 1.53± 1.68 3.10	2 1 1 1	173 173 194 313	87 173 194 313	351 263 326 970	176 263 326 970	0.55 0.55 0.62 1.00	633 476 526 970
Laborers	313 313 313 313 313 313 313 313 313 313	. 85 . 90 1. 00 1. 25 1. 33 1. 50 1. 55 1. 70 1. 80 2. 00 (a)	1 19 19 16 1 3 2 10 3	26 251 68 141 3 19 148 19 250 132 (a)	26 251 68 7 3 148 6 125 13 (a)	22 230 70 176 4 29 231 32 445 262 124	22 230 70 9 4 5 231 11 223 26 41	0. 08 0. 80 0. 22 0. 45 0. 01 0. 06 0. 47 0. 06 0. 80 0. 42 (a)	265 287 323 391 417 478 489 527 557 621 (a)
Total	313	(6)	48	(6)	(6)	1, 625	34	(6)	(b)
Laborers and miners	313	(a)	6	(a)	(a)	1, 349	225	(a)	(a)
Laborers and trappers	313 313	.593 .865	1	, 32 191	32 191	19 165	19 165	0. 10 0. 61	196 270
Total	313	. 821	2	223	112	184	92	0.71	258
Miners Miners and reckmen Miner and shifter Office boy Oiler Policeman Repairers and rockmen	313 313 313 313	(a, c) (a) (a) .55 .90 .95}	467 12 1 1 1 1 2	(a) (a) (a) 140 249 131 (a)	(a) (a) (a) 140 249 131 (a)	e106, 686 1, 500 544 78 226 125 187	228 133 544 78 226 125 94	(a) (a) (a) 0.45 0.80 -0.42 (a)	(a) (a) (b) 174 284 299 (a)

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the proceeding footnote.
c From the earnings here given miners paid 27.5 cents per week for oil and tool sharpening. They also furnished powder, but the cost is not known.

H. Ex. 265——28

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND BARNINGS-Continued. R.-Bituminous Coal: UNITED STATES-Continued.

ESTABLISHMENT No. 109-Concluded.

	Work-	Actual daily earn-ings, or daily		otual ce	Condition if workmon had continuous conployment.				
Occupation.	days in the period.	resizes to	Dif-	Degr	of dome.	Earni	ngs.	Noces-	Conso- quent average extraings per con- ployé.
		daily earn- ings.	ploy-	Total.	Average.	Total.	Aver-	ployés.	
Rockmen	313 313 313 313	\$1.75 1.80 2.00 (a)	1 1 4 8	4 5 90 (a)	4 5 23 (a)	\$7 9 180 29	\$7 \$ 45 10	0.01 0.03 0.29 (4)	\$548 \$63 625 (a)
Total	212	(b)	•	(b)	(b)	225	25	(0)	(b)
ShifterTimberman	313 313	1. 80 2. 00	1	236 279	236 279	429 568	429 568	0.75 . 0.80	863 637
Trackmen	313 313 313 . 313	1. 25 1. 75 2.00 2.15	1 1 4 2	26 28 27 530	26 28 7 265	32 49 55 1, 143	32 49 . 14 572	0.08 0.09 0.09 1.60	363 548 638 675
Total	812	2.00}	8	611	76	1, 279	160	1.95	. 655
Trappers	313 313	. 55 . 63	7 6	832 404	47 67	183 255	26 43	1.06 1.29	173 196
Total	313	. 50}	13	736	57	438	84	2.36	196
Weighmen	313 313	1.75 2.03	1	20 313	20 313	25 685	85 63 5	0.06 1.00	548 635
Total	318	2.01	3	833	167	670	235	1.06	630
The establishment		(b)	628	(b)	(b)	c128,714	205	(b)	(b)

ESTABLISHMENT No. -.

Blacksmith	313 313 313 313	\$2,25 (a) 1,70 (a)	1 1 1	307 (4) 10 (4)	307 (6) 10 (6)	9694 44 17 ,281	\$694 44 17 231	0. 98 (a) 0. 03 (a)	\$706 (a) 533 (a)
Carpenters	313 313	2.00 3.00	1	10	10	20 12	20 12	0. 03 0. 01	626 939
Total	313	2. 284	2	14	7	\$2	16	0.04	715
Drivers	313 313 313 313	1. 85 2. 30 (4) 1. 61	8 1 2 2	1, 340 289 (a) 301	168 289 (a) 151	2, 484 603 90 485	311 663 50 243	4, 28 9, 92 ,a) 0, 96	580 718 (4) 501
Engineers	313 31 3	2.00 2.11	2 1	25 278	13 278	49 588	25 568	0. 08 0. 89	613 662
Total	313	2.10	3	303	101	637	212	0.97	658
Grader, track	313 313	1. 50 . 81 4	1 2	67 230	67 115	101 1 8 7	101	0. 21 0. 73	472 254

a Paul by the quantity. The daily rate of pay and days of work done cannot be given.
b No total can be made for the reason shown in the preceding footnote.
c In addition \$2.784 was paid to outside persons for labor done under contract, which is included in the statement for this catablishment on page 210.

PART II.-TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.—Bituminous Coal: UNITED STATES—Continued.

ESTABLISHMENT No. - - Concluded.

Occupation.	Work-	Actual daily earn- ings,or daily rate	ı	ctual co	Condition if workmen had continuous employment.				
Occupation.	In the	nesrect	Dif-	Day work		Earni	ngs.	Neces-	Conse- quent
		daily	em- ploy- és.	Total.	Aver-	Total.	Aver-	eary em- ployés.	earnings per em- ployé.
Laborer	313 813 813 813 813 813	\$1.30 (a, b) (b) 2.871 1.30 1.10	227 2 1 1 1	10 (b) (b) 313 10 205	10 (b) (b) 313 10 205	813 a 58, 615 696 900 13 225	\$13 258 348 900 13 225	0, 03 (b) (b) 1, 00 0, 03 0, 65	\$407 (b) (b) 900 407 344
Roadmen	313 313	2.00 2.15	2	336 45	168 45	672 97	236 97	1.07 0.14	626 675
Total	313	2.03	3	301	127	760	256	1.21	632
Shovellers	313 313 318	1.60 1.63 1.75	5 1 9	52 106 923	10 106 103	178 1, 602	16 178 178	0. 17 0. 34 2. 95	494 526 543
Total	313	1.72	15	1, 061	72	1, 963	124	2.46	530
Trappers	313 313 313 313	. 60 2. 00 1. 75 2. 30	6 1 2 1	329 25 496 313	55 25 218 818	198 50 868 720	83 50 434 720	1. 05 0. 08 1. 58 1. 00	188 626 548 720
The establishment	•••••	(0)	286	(¢)	(e)	70, 602	247	(e)	(0)

ESTABLISHMENT No. -

Blacksmiths	818	\$2.38	2	429	215	\$1,020	\$ 510	1.87	\$744
Carpenter	313 313	1. 92 1. 871	5	318 290	64 290	610 560	123	1.02	600 604
Drillers	813	1. 25	8	297	37	871	46	0.95	391
Driller and trapper	818	1.14	1	29	20	23	23	0.00	356
Drivers	313 313	1. 87è 2. 00	16 23	1, 497 1, 190	80 52	2,744 2,843	172 102	4.56 2.83	602 612
Total	313	1. 93}	20	2, 626	67	5, 087	130	8. 30	806
Driver and miner	313	2.02	1	93	93	186	186	0.29	633
Driver and slag hauler	313	1.43	1	79	79	118	118	0. 25	448
Dumpers	313	1.50	2	115	58	172	86	0.87	468
	813	1. 624	ĭ	175	175	274	274	0, 56	490
Total	313	1.54	8	290	97	446	149	0.93	481
Dumper, boss	313	2.25	1	208	208	450	450	0, 36	691
Dumper, boss	313	1. 754	ī	82	82	144	144	0.26	550
Engineer	313	1.50	1	187	187	290	280	0.00	489
Engineer, hoisting	813	2. 25	1	253	253	554	554	0.81	616
Fireman	313	1. 75	1	263	263	444	414	0.84	528

No information in regard to miners' supplies.
 Paid by the quantity. The daily rate of pay and days of work done cannot be given,
 No total can be made for the reason shown in the preceding footnote,

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

R.-Bituminous Coal: UMITED STATES-Continued.

ESTABLISHMENT No. - Concluded.

	Work-	Actual daily earn- ings, or daily	•	otaal on	adition	for peci	el.	Condition if workmen had continuous conpleyment.		
Occupation.		Tato Bearest To Sverace	Dif-	Days week	4 de de de de de de de de de de de de de	Beent	aga.	Your	Comes	
		366	854	Total.	Avec- ago.	Total	Aver-	ployée.	average per eca- pleyé.	
Laborers	213 213	\$1.25 1.36	16 1	112 226	7 226	\$140 812	\$0 812	4.36 4.72	#80E 433	
Total	313	1.33	17	235	20	453	27	1.00	439	
Mason	213	2.334	1	8	8	7	7	0.01	730	
Minere	313 313 313 313	el40 el57 el00 el00	1 18 264	5 16 952 27, 568	5 16 53 104	a 7 a 30 a 1, 950 a 00, 616	7 30 100 230	0.68 0.66 0.64 0.64	636 587 644 666	
Total	213	a 2. 19}	264	28, 581	100	s 62, 612	230	81_15	887	
Miners and tracklayers Miner and trappers Miner and water healer Pips layer Pit boses Pumpmen Pumpmen Pumpmen Pumpmen Slack healers Slack healers Slack healers Slack healers Slack shovellers Slack shovellers Stable bose Teamster Tracklayers	N3	1.10 1.17 1.17 1.17 1.17 1.18 1.18 1.18 1.18	22112212412111 3841	120 88 96 153 330 447 112 123 123 123 123 124 140 150 127 154	153 195 129 129 129 129 129 135 130 47 52 537 515 154	202 180 105 205 205 205 205 205 205 205 205 205 2	126 75 165 263 213 213 213 214 215 215 215 215 215 215 215 215 215 215	0. 45 0. 30	867 884 865 865 865 865 865 865 867 877 812 812 800 673 673	
Total	313	2.081	11		60	1, 368	124	2.09	653	
Tracklayer and trapper	313	1.50	1	•	6	•	•	0. 02	470	
Trappers	313 313 313	. 65 . 80 . 95)	6 24 1	40 1, 303 100	7 54 109	27 1, 634 104	5 43 104	4.16 4.25	211 209 230	
Total	313	. 80}	31	1, 451	47	1, 165	28	4.64	251	
Trimmer, loes Watchman Water haulers Weighmaster	313 313 365 313 313	1. 55 1. 884 1. 64 1. 50 2. 20	1 1 4 1	404 372 286 155 313	101 272 286 39 313	627 512 460 281 730	157 512 469 58 720	1. 29 9. 87 9. 78 9. 50 1. 60	486 540 800 486 720	
The establishment		2.03	445	40, 412	91	82, 058	184	128. 81	637	

ESTABLISHMENT No. -

Blacksmiths	313 313	\$2.15 2.25	3	488 173	163 87	\$1, 658 367	\$253 194	1.56 0.55	\$679 700
Total Blasters	313 313 313 313	2. 18 ₁ 1. 23 ₁ 1. 50 2. 00		3 18 14	122 3 18 14			2.11 0.01 0.05 0.04	604 417 470 628
Total	313	1.004	3	35	12	59	» .	0.11	526

[&]amp; From earnings here given miners bought their own supplies at a cost of \$1.00 per week.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.—Bituminous Coal: UNITED STATES—Continued.

ESTABLISHMENT No. -. - Continued.

•	Work-	- conty	A	os Lanto.	adition	a for perio	sd.	works	ition if sea had nuous yment.
Occupation.	days in the period.	rate Dearest to	Dif- ferent	Day:	of lone.	Earni	nge.	Neces-	Consequent
		daily earn- ings.	ploy-	Total.	Aver-	Total.	Aver-	em- ployés.	earninge per em- ployé.
Blasters and head cutters	365	(a)	2	(a)	(a)	\$100	\$85	(c)	(a)
Carpenters	313 813 313	\$1. 87 2. 00 2. 25	1 8 1	7 91 11	7 30 11	18 182 24	13 61 24	0. 02 0. 29 0. 04	\$581 626 683
Total	313	2.01	5	109	22	219	44	0.36	629
Civil engineers	313 313 318	1. 50 1. 75 1. 90	8 1 1	10 8 27	3 8 27	15 14 51	5 14 51	0.03 0.03 0.00	470 548 591
Total	313	1. 78	5	45	•	80	16	0, 15	556
Drivers	313 313 313 313 313	1.15 1.80 1.90 2.00 2.25	1 2 8 14 1	7 106 1, 288 965 25	7 58 161 99 25	191 2,479 1,941 56	96 310 139 56	0, 02 0.84 4, 12 3, 06 0, 08	358 564 602 630 701
Total	813	1.95}	26	2, 891	93	4, 675	180	7. 64	612
Drivers and miners	313	(a)	7	(a)	(s)	2, 003	200	(a)	(a)
Dumpers	813 818	1. 40 1. 60	4 5	519 245	130 49	749 398	187 79	1.86 0.78	452 502
Total	313	1. 49	9	761	85	1, 143	127	2.44	468
Dumper and miner	318 318	(a) 1. 29	1	(a) 134	(a) 134	369 173	369 178	(s) 0,43	(a) 404
Engineers	818 318 313	1. 26½ 2. 00 2. 50	1 1 1	278 299 286	288 290 286	365 625 700	365 625 700	0. 92 0. 96 0. 91	297 654 766
Total	213	1. 98	3	878	201	1, 690	563	2.79	606
Engineer and fireman	365	1.90	1	346	346	657	657	0.95	663
Firemen	365 365	1. 65 1. 85	1	102 326	102 326	170 595	170 5 9 6	1.25 1.30	908
Total	305	1. 78}	3	428	214	765	283	1.17	652
Fireman and miner Foreman Head cutters Head cutters and miners	365 313 365 365	(a) 3. 10 (a) (s)	1 1 12 17	(a) 313 (a) (a)	(a) 313 (a) (a)	148 970 1, 074 6, 854	148 970 90 403	(a) 1.00 (a) (a)	(a) 970 (a) (a)
Laborers	313 818 818 813 313 313 313 313 313	.65 1.00 1.25 1.40 1.50 1.60 1.75 1.90 2.00	1 5 2 12 4 4 1 10	11 47 120 101 835 106 82 284 542	11 47 24 51 28 26 21 284 54 19	7 47 150 142 504 169 143 543 1,084	7 47 30 71 42 42 36 543 108 48	0.04 0.15 0.38 0.32 1.07 0.34 0.26 0.91 1.73 0.06	189 313 391 440 471 504 546 626 708
Total	313	1.72	41	1, 646	40	2, 832	•	5. 26	539
Laborers and miners	365	(a)	12	(a)	(E)	2, 584	210	(a)	(a)

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. R.-Bituminous Coal: UNITED STATES-Continued.

ESTABLISHMENT No. - - Concluded. .

	Work-	daily	_	ctual co	od.	Condition if workmen had continuous employment.			
Occupation.	days	rate nearest to average	Dif- ferent	Days work	of done,	Earnings.		Neces-	Conse- quent
		daily	ploy- és.	Total.	Average.	Total.	Aver- age.	em- ployés.	earninge per em- ployé.
Mason Mechanio Miners Miner and propman Miner and pumpman Miner and shifter Miner and trapper Office boy	365 365 365 365	\$2.25 2.60 (a, b) (b) (b) (b) (b)	1 434 1 1 1	(b) (b) (b) (b) (b)	(b) (b) (b) (b) (b)	\$9 13 478, 168 245 324 476 145 2	\$9 13 180 245 324 476 145 2	0. 01 0. 02 (b) (b) (b) (b) (b)	(b) (b) (b) (b) (b) (b)
Oilers	313 313	1.00 1.20	1	7 20	7 20	7 24	7 24	0.02 0.06	313 376
Total	313	1.15	2	27	14	31	16	0.08	359
Oiler and trapper Policemen Propman and weighman	313	.93 .951 1.871	1 2 1	262 163 118	262 82 118	244 156 221	244 78 221	0.86 0.52 0.38	291 300 586
Pumpmen	313 313	1.50 1.60	3	368 313	123 104	552 512	184 171	1.18 1.00	470 512
Total	313	1.56	6	681	114	1,064	177	2.18	489
Shifter	313 313 365 313 313 313	1.80 1.50 1.61 2.15 .612 1.75	1 1 1 25 1	254 241 365 317 1, 459 25	254 241 365 317 58 25	453 384 588 692 894 44	453 384 588 692 36 44	0.81 0.77 1.00 1.01 4.06 0.08	558 499 588 683 192 551
Weighmasters	313 313	1.50 2.24	1 1	97 236	97 236	147 530	147 530	0.31 0.75	474 703
Total	313	2.03	2	333	167	677	339	1.06	638
The establishment		(c)	639	(c)	(c)	112, 838	177	(e)	(e)

ESTABLISHMENT No. -

Blacksmiths	813 818	\$2.00 2.00	6 5	818 672	136 134	\$1, 624 1, 678	\$271 336	2. 61 2. 15	9621 782
Total	313	2. 211	11	1, 490	135	2, 302	300	4. 78	684
Blacksmiths' helpers	313 313 313 313	1.00 1.25 1.50 1.75	11 9 4 2	586 635 76 129	53 71 19 65	587 807 114 217	53 90 29 109	1. 87 2. 03 0. 24 0. 41	314 398 479 527
Total	313	1.21	26	1, 426	55	1, 725	66	4.55	879
Blacksmiths' helpers and	313	1.13	2	116	58	121	66	0.37	253

a No information in regard to miners' supplies.
 b Paid by the quantity. The daily rate of pay and days of work done cannot be given.
 s No total can be made for the reason shown in the preceding feetnets.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. 'R.—Bituminous Conl: United States—Continued.

ESTABLISHMENT No. -. -Continued.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ondition	for peri	od.	works	ition if nen had inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	nga.	Neces-	Conse- quent
*		daily earn- ings.	om- ploy- 6s.	Total.	Aver-	Total.	Average.	sary em- ployés.	earnings per em- ployé.
Carpenters	313 313 313 313 313 313 313 313 313 313	\$1.00 1.25 1.40 1.50 1.60 1.75 1.87 2.00 2.50 2.91 4.80	216621238111	17 251 1, 602 9 138 359 895 251 224 5	2 17 42 67 9 69 120 112 251 224 5	\$4 21 354 2,422 14 237 673 1,764 628 670 24	\$2 21 59 101 14 119 224 221 628 670 24	0. 01 0. 05 0. 80 5. 12 0. 03 0. 44 1. 15 2. 86 0. 80 0. 72 0. 02	\$313 387 441 473 487 538 597 617 783 936 1,502
Total	313	1.81	50	3, 755	75	6, 811	136	12,00	508
Carpenter and laborer Carpenters and miners	313 313	1. 32½ 1. 74½	1 3	37 121	87 40	49 211	49 70	0.12 0.39	415 546
Entrymen	313 313 313 313 313 313 313 313	0.80 1.00 1.25 1.40 1.50 2.00 2.25 2.66 (a)	1 17 9 3 12 14 2 1 29	31 68 135 103 157 193 46 3 (a)	31 4 15 34 13 14 23 3 (a)	25 69 168 144 246 386 104 8 3,375	25 4 19 48 21 28 52 8 116	0. 10 0. 22 0. 43 0. 33 0. 50 0. 62 0. 15 0. 01 (a)	252 318 390 438 490 626 708 835 (a)
Total	313	(6)	88	(b)	(6)	4, 525	51	(8)	(6)
Entrymen and haulers Entrymen and laborers	313 313	1.47 (a)	5	261 (a)	52 (a)	384 830	77 138	0.83 (a)	(a) 461
Entrymen and miners	313 313	1.51 2.01	2	43 110	22 119	65 239	33 239	0.14 0.28	473 629
Total	313	1. 87	3	162	54	304	101	0.52	587
Entryman and timberman Entryman and water boiler Foreman, haulers	313 313 313	(a) .673 2, 25	1 1 1	(a) 62 235	(a) 62 235	162 42 522	162 42 522	(a) 0,20 0,75	(a) 212 693
Foremen, laborers	313 313 313	1. 54 1. 725 3. 00	3 2 1	576 402 8	192 201 8	768 677 24	256 339 24	1.84 1.28 0.03	417 527 939
Total	313	1. 49	6	986	164	1, 469	245	3. 15	466
Haulers	313 313 313 313 313 313 313 313 313 313	. 45 . 50 . 60 . 70 . 75 . 90 1. 10 1. 15 1. 25 1. 25 1. 45 1. 50 1. 604 1. 75 1. 91	1 18 4 1 6 2 2 3 5 5 2 2 17 6 8 19 6 4	76 851 172 214 144 206 544 206 69 323 410 185 682 564 111 538	76 47 43 214 24 103 24 40 30 35 19 68 23 36 94 3	34 428 103 146 108 178 557 218 68 83 405 545 269 1,031 908 19 1,027	24 24 26 146 18 89 24 44 44 34 42 24 91 34 54 151	0. 24 2. 72 0. 58 0. 68 0. 46 0. 68 1. 74 0. 64 0. 19 0. 22 1. 03 1. 31 9. 59 2. 18 0. 04	140 157 187 214 235 270 320 341 355 377 392 416 455 473 504

s Paid by the quantity. The daily rate of pay and days of work does cannot be given.

REPORT OF THE COMMISSIONER OF LABOR.

TABLEXIE.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. R.—Bituminous Coal: United States—Continued.

ESTABLISHMENT No. -, -Continued.

	Work-	Actual daily earn- ings, or daily		ctual co	ndițion	for peri	od.	works	ition if nen had innous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	s of done.	Barni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total	Aver- age.	ployés.	earnings per em- ployé.
Hanlers—concluded	313 313 313	\$2.00 2.25 (a)	16 3 14	172 139 (a)	11 46 (a)	\$342 314 1, 970	\$21 105 141	0.55 0.44 (a)	\$622 787 (4)
Total	313	(6)	161	(6)	(6)	8, 753	54	(6)	(b)
Haulers and laborers	313 313 313 313 313 313	.66 .97 1.32 1.45 1.94 (a)	1 3 5 1 1 2	299 98 370 13 142 (a)	299 33 74 13 142 (a)	199 95 489 19 276 386	199 32 98 19 276 193	0.96 0.31 1.18 0.04 0.45 (a)	208 363 414 457 608 (a)
Total	313	(b)	13	(b)	(6)	1,464	113	(4)	(8)
Haulers and miners	313 318 313 313 313	1.49 1.70 2.02 2.48 (a)	19 1 1 2	1,433 134 263 (a)	49 75 124 263 (a)	202 2, 437 251 653 389	128 128 251 653 195	0, 63 4, 58 0, 40 0, 84 (a)	466 532 634 777 (4)
Total	313	(b)	27	(0)	(6)	4,022	149	(6)	iba
Hanler and switchman Hanler and trammer Hanler and water boiler	313 313 313	1.50 2.15 .53	1	241 63	241 62	3 518 34	3 518 34	8, 81 8, 77 0, 29	678 673 173
Laborers	313 313 313 313 313 313 313 313 313 313		1 1 1 1 8 80 8 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	1,25		54 13 10 213 60 807 223 241 1,516 414 311 115 60 60 73 73 73 73 74 75 75 75 75 75 75 75 75 75 75 75 75 75	13 10 36 11 15 33 49 89 52	. 电电电电电阻 100 mm	419
Total	223	131	335	(4)	3.	17, 196	39	7.	ð.
Laborers and miners	111 111 111 111 111 111 111 111 111 11	1.55q 1.55q 1.75q 1.85q	3	\$ 35 E	e K K	178 S14 307 300 6, 506	39 30 41 31 34		## ## ## ##
2542 · · · · · · · · · · · · · · · · · · ·	7::3	, & ,	-	3.	۵,	1,20	:::	9.	b .
Laborer and timberman Laborer and trans-car repairer Laborer and trans-read to restor	27) 27) 313	: 34 : 34	I I	15 15	4	314 311 42	24 131 42	d. L 28 d.	
Person and Campag		L 60	•	=	=	35 3	=). F	=
Macu. 7 809	. H	7.46	i	3	3	75.	35	1 7	
T.12	22	LS	3	2	=	2			=

a Paril by the quantity. The duly ture of pay and days of work inno manual to given. I No total can to make for the reason thrown in the preceding factors.

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. R.-Bituminous Coal: UNITED STATES-Concluded.

ESTABLISHMENT No. - - Concluded.

	Work	1		ctual oc	nditio	n for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	nate nearest to average	Dif-	Days work		Earni	ngs.	Neces-	Conse- quent	
·		daily earn- ings.	om- ploy- 6s.	Total.	Aver-	Total.	Aver-	eary em- ployés.	earnings per em- ployé.	
Miners	313	a \$2.00 (b)	812 1	45, 688 (b)	56 (b)	a\$91, 376 110	\$113 110	145. 97 (b)	\$626 (b)	
Teamsters	313 313 313 313 313 313	. 75 1. 00 1. 15 1. 25 1. 40 1. 68 2. 334	2 16 2 8 1 1	7 108 67 408 229 70	4 6 34 51 229 70 5	5 104 78 503 317 117 21	3 7 20 63 317 117 11	0. 03 0. 33 0. 21 1. 30 0. 78 0. 22 0. 03	224 316 364 385 433 523 730	
Total	318	1.28	32	893	28	1, 144	*	- 2.84	401	
Teamster and tram-road re- pairer.	313 813	1. 25	1 23	4	4	5	5	0.01	391	
	1	(4)		(a)	(a)	3, 317	144	(a)	(a)	
Tram-road repairers	813 31 3 313	1.50 2.00 2.121	7	268 382 100	134 55 160	413 763 340	207 109 840	0.86 1.22 0.51	482 625 665	
Total	318	1.87	10	810	81	1,516	152	2. 59	586	
Trammers	313 313 313	. 50 1. 00 1. 50	1 7 1	44 14 2	44 2 2 2	22 14 8	23 2 3	0. 14 0. 04 0. 01	157 818 470	
Total	313	. 65	9	60	7	20	4	0.19	203	
Water boilers	818	1.00	6	294	66	429	72	1. 26	341	
The establishment		(c)	1, 680	(c)	(6)	158, 985	96	. (e)	(e)	

S .- Bituminous Coal: DOMINION OF CANADA.

* ESTABLISHMENT No. 149.

Bankmen	818 313	\$1. 10 1. 20	7 1	1, 716 318	245 818	\$1, 896 381	\$371 381	5. 43 1. 02	\$346 375
Total	813	1.12	8	2, 034	254	2, 277	285	6. 50	350
Blacksmiths	313 313 313	1. 10 1. 25 1. 60	3 1 1	497 239 307	249 288 307	546 206 491	273 296 491	1.50 0.76 0.96	344 390 501
Total	813	1. 28	4	1, 043	261	1, 335	234	2.23	401
Bottomers	313 313 313	. 80 . 90 1. 25	3 2 1	668 359 329	223 180 329	549 823 411	183 163 411	2.13 1.15 1.05	257 283 391
Total	313	. 94}	•	1, 356	226	1, 283	214	4.33	296
Brakemen, incline	813 313 313 313	. 50 . 65 . 75 . 90	1 3 7	302 706 493 1, 242	302 235 248 177	151 463 382 1, 096	151 154 191 157	0.96 2.26 1.58 3.97	157 205 242 276
Total	313	.76	13	2, 745	211	2, 092	161	8.77	239

s No information in regard to miners' supplies.
o Paid by the quantity. The daily rate of pay and days of work done cannot be given.
s No total can be made for the reason shown in the preceding footnets.

442 REPORT OF THE COMMISSIONER OF LABOR.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

S .- Bituminous Coal: DOMINION OF CANADA-Continued.

ESTABLISHMENT No. 148-Continued.

	Work-	Actual daily earn- or daily	4	otaal ee	nditio	for peri	rt.	works	ition if non had noons symmet.
Occupation.	days in the period	rate negreet to	Dif- ferent	Day:		Earn	ings.	Noos-	Come-
		daily earn- ings.	ploy-	Total.	Aver-	Total.	Aver-	ployés.	arecago ceraings per em- pioyé.
Carpenters	313 313 313 313 313	\$1.25 1.30 1.35 1.40 2.25	2 2 1 1	614 234 34 250 277	307 117 34 250 277	\$767 306 45 383 623	\$384 153 45 \$363 623	1.06 0.75 0.11 0.83 0.88	\$801 408 414 430 784
Total	313	1.48}	7	1,418	203	2, 103	300	4.53	464
Deputy overmen	313 313 313	1.40 1.45 1.50	1 3	263 574 . 296	262 287 296	367 832 443	367 416 443	0.84 1.88 0.95	438 454 486
Total	313	1.45	4	1, 133	283	1, 642	411	2.63	454
Drivers Drivers and laborers Drivers and miners' helper Eaginemen, fan Eaginemen, hanling Enginemen, winding Extra hend	313 318 313 365 318 313 313	1. 92 1. 20 1. 20 1. 20 1. 25 1. 00	3 1 2 2 1	761 469 237 763 475 830 252	153 235 237 363 238 238 230 252	482 226 248 015 560 412 252	96 163 243 458 285 412 253	2. 43 1. 50 0. 78 2. 09 1. 52 1. 05 0. 81	188 218 531 468 375 301 313
Firemen	318 813 365	. 80 . 90 1. 15	1 1 3	270 814 597	270 314 199	215 283 686	215 283 229	0.96 1.60 1.64	340 382 419
Total	837	1.001	5	1, 181	236	1, 184	237	3, 50	838
Laborers, surface	313 313 313 313 313 313 313 313	.50 .60 .70 .85 .90 1.00 1.05	5 1 2 1 1 9 3	453 245 144 7 292 1,399 . 632 310	91 245 72 7 292 153 211 155	226 143 101 6 265 1, 416 661 341	45 143 51 6 263 157 220 171	1.45 0.78 0.46 0.02 0.93 4.47 2.02 0.99	188 183 229 268 294 817 327
Total	318	. 904	24	3, 482	145	8, 150	132	11, 12	284
Laborers, underground	313 313 313 313 313 313 313	.50 .65 .90 1.10 1.20 1.35 1.40	1 1 2 8 14 1 1	164 869 143 1.326 1,865 285 286 833	164 309 72 166 133 285 286 333	197 129 1, 435 2, 228 384 402 483	72 197 65 179 160 381 402 483	0. 52 0. 99 0. 46 4. 24 5. 96 0. 91 0. 91 1. 06	157 200 283 239 376 422 440 454
Total	313	1. 13	29	4, 711	162	5, 350	184	15. 05	255
Laborers and miners' helpers .	313	1.09	2	190	95	208	104	0. 61	343
Lempmen	313 313 313	. 50 1. 10 1. 25	3 1	323 730 842	323 243 342	161 802 427	161 267 427	1.03 2.33 1.09	156 344 391
Total	313	. 994	5	1, 395	279	1, 390	278	4.45	312
Machinists	313 313	1. 30 2. 22	1	840 813	340 313	441 696	441 696	1. 09 1. 00	406 606
Total	313	1.74	2	653	327	1, 137	569	2.09	545
Mason	313 313	2.00 1.20 3.83	1	310 - 308 313	310 308 313	620 360 1, 200	620 380 1, 200	0.99 0.96 1.00	626 305 1, 200

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. S.—Bituminous Coal: DOMINION OF CANADA—Concluded.

ESTABLISHMENT No. 148-Concluded.

	Work-	Actual daily earn-ings, or daily		ctual co	endition	n for peri	od.	works	ition if nen had inuous yment
Occupation.	days in the period.	rate nearest to average	Dif.	Days work		Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	ploy- 6a.	Total.	Aver age.	Total.	Aver-	em- ployés.	per em- ployé.
Mine bosses, assistant	365 365	\$1.66 2.00	1	365 365	365 365	\$5 89 730	\$589 730	1.00 1.00	9686 730
Total	365	1.80 <u>i</u>	- 3	730	365	1, 319	660	2.00	660
Miners	813 313 318 318	a 1.511 a 1.751 a 1.921 a 2.24	15 84 24 9	3, 245 7, 659 5, 814 2, 390	216 225 242 266	a 4, 922 a 13, 438 a 11, 188 a 5, 357	828 395 466 595	10. 87 24. 47 18. 58 7. 64	475 549 602 702
	313	a 2.48	4	1, 029	257	42,554	639	3. 29	777
Total	313	a 1. 86	86	20, 137	234	a 37, 459	436	64. 35	502
Miners and miners' helpers	313 313 313 313	1. 26 1. 591 1. 78 2. 16	1 5 1	222 1, 086 157 217	222 217 157 217	280 1, 734 276 469	280 347 276 469	0. 71 3. 47 0. 50 0. 69	395 500 550 676
Total	813	1. 64	8	1, 682	210	. 2,750	845	5. 37	513
Miners and timbermen	313 313	1.48 1.74	4	862 277	216 277	1, 274 482	819 482	2. 75 0. 88	468 543
Total	313	1.54	5	1, 139	228	1, 756	851	3. 63	483
Miners' helpers	313 313	1. 20 1. 30	48 2	5, 667 523	132 262	6, 836 676	159 838	18. 11 1. 67	378 403
Total	813	1.21	45	6, 190	138	7, 512	167	19.78	880
Pick handler Piate layers Pumpman	813 313 318	1. 15 1. 10 1. 25	1 2 1	292 333 816	292 167 816	335 366 427	333 183 427	0.93 1.06 1.01	250 344 421
Screeners	313 313	. 50 1. 10	1 5	266 1, 363	266 273	133 1, 500	183 300	0. 85 4. 85	157 344
Total	813	1.00	6	1, 639	272	1, 633	272	5. 20	814
Slag hauler	818	1.10	, 1	211	211	224	224	0. 67	833
Stablemen	365 365	1, 00 1, 20	1	837 853	337 353	337 424	237 424	0.92 0.97	368 438
Total	365	1. 10	2	690	345	761	381	1. 89	403
Storekeeper and timekeeper.	318	2.11	1	812	312	660	960	1.00	663
Timbermen	318 318 318 318	1. 30 1. 35 1. 40 1. 45	18 12 4	1, 680 2, 942 1, 122 550	129 245 281 275	2, 202 3, 968 1, 569 799	169 331 392 400	5.37 9.40 3.56 1.76	410 423 436 455
Total	313	1. 35	31	6, 294	208	8, 538	275	20. 11	425
Trappers	313 365	. 40 1. 00	6 1	803 853	134 853	330 353	55 853	2. 57 0. 97	129 365
Weighmen	318 813	. 90 1. 10	1	311 301	311 301	280 331	280 231	0. 98 0. 98	283 341
Total;	813	1.00	2	612	206	611	306	1.95	812
The establishment		1.39	326	67, 281	206	93, 582	287	213. 52	438

s Miners' supplies are furnished by the company.

TABLE XII. -- ACTUAL AND THEORETICAL TIME AND EARNINGS--Continued. T.-Bituminous Coal: CONTINENT OF EUROPE.

PSTABLISHMENT No. 156.

	Work-	Actual daily corn-ings, or daily	4	otual oc	- 	a for peri	od.	- cent	ition if non had istoon lyment.
Occupation.	ing days in the period.	rate nearest to	Dif- ferent	Days week	of ione.	Bern	ings.	Neces-	Conce
		daily earn- ings.	ploy-	Total.	Average.	Total.	ATOT-	eary em- ployée.	average carnings per em- ployé.
Brakemen	77	\$0.25 ,20	3 2	106 145	25 73	\$27 42	\$0 21	1.86 1.86	121
Total	77	. 27	5	251	50	•	14	3.26	21
Cagomen	77 77	.58 .63 .65	1 2 1 2	58 126 17 91	58 63 17 46	34 79 11 63	34 40 11 82	0.75 1.63 0.22 1.13	44 44 54 53
Total	77	. 64	6	292	49	187	31	2.78	45
Cleaners	77	.20	2	107	54	27	14	1.20	19
Cleaners, lamp	77	.31 .37	1	77 76	77 76	24 36	34 28	1.09 0.99	26 25
Total	77	. 34	3	153	77	52	20	1.90	24
D rivers	77	. 34 . 38 . 46 . 56	1 1 1	70 65 70	70 65 70	24 25 32	2 22 43 43	0.91 0.64 0.91	24 34 34
	# # # #	.63 .63 .71	111111111111111111111111111111111111111	73 71 8 44 73	73 71 8 44 73	43 42 5 28 53	42 5 28 53	0.95 0.92 0.10 0.57 0.95	26 26 41 41 41 56
	77			- '2		2	2	0.03	ñ
Total	77	. 531	9	476	53	254	28	6. 18	41
Dampers	77	. 23 . 29 . 58	1 1 1	74 78	74 75	1 21 48	1 21 43	0, 03 0, 96 0, 97	16 21 44
Total	77	. 42}	8	158	51	65	22	1.98	*
Engineers	77	. 68 . 87	2 2	87 174	44 87	50 151	3 0 76	1. 13 2. 26	51 67
Total	77	. 801	4	- 261	65	210	53	8. 39	63
Firemen	77 77 77	. 48 . 51 . 60	1 2 6	12 87 223	12 19 37	6 19 133	6 10 23	0. 16 0. 48 2. 90	39 40 40
Total	77	. 56	9	272	30	158	18	3, 54	4.5
Foreman	77	. 63	1	88	88	54	54	1.14	47
Gallery cutters	77	. 91 } 1. 06 1. 24 }	34 43 1	1, 187 2, 191 16	35 51 16	1, 084 2, 323 20	32 54 20	15. 42 28. 45 0. 21	70 82 96
Total	77	1.01	78	3, 394	44	3, 427	44	44.08	78
Gallery cutter and miner	77	1.00	1	74	74	74	74	0. 96	17
Gallery outters' helpers	77 77 77 77 77	.25 .28 .30 .31 .33 .34	12213228	25 147 129 75 180 63 135	25 74 65 75 60 32	6 41 39 23 57 21 48 51	6 21 20 23 19 11 24	0. 32 1. 91 1. 68 0. 97 2. 34 0. 82 1. 75	18 21 23 24 24 26 27

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. T.—Bituminous Coal: CONTINENT OF EUROPE—Continued.

ESTABLISHMENT No. 156-Continued

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od	Condition if workmen had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent	
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	sary em- ployés.	average earnings per em- ployé.	
Gallery cuttors' helpers—con- cluded.	77	\$0.441 461 48 50 51 52 53 54 671 724 77 87 87	1 1 13 5	121 224 25 75 66 65 710 116 105 73 237 71 87	40 75 25 75 66 65 55 23 35 24 47 18 22 2	\$55 105 12 38 34 34 377 63 68 53 182 61 78	\$18 35 12 38 34 29 13 23 18 36 15 20 2	1. 57 2. 91 0. 32 0. 97 0. 86 0. 84 9. 22 1. 51 1. 36 0. 95 3. 08 0. 92 1. 13 0. 03	#33 36 37 38 44 40 43 43 56 56 56 56	
Total	77	. 501	64	2, 854	45	1, 448	23	37.06	30	
Gallery repairers	77 77 77 77 77 77	.72 .77 .87 .921 .961	2 5 13 4 14	209 230 125 571	2 42 18 21 41 2	3 166 202 117 551 4	33 16 29 39 2	0.05 2.71 2.99 1.62 7.42 0.05	58 61 68 71 74	
Total	77	.914	40	1, 143	29	1,043	26	14. 84	70	
Gallery repairer and miner	77 77	. 941	1 2	19 143	19 72	18 41	18 21	0. 25 1. 86	77	
Inclined-plane men	77 77 77 77 77 77	. 25 . 341 . 381 . 62 . 631 . 711	1 4 2 7 2 4	9 200 73 314 58 97	9 50 37 45 29 24	2 70 28 196 37 68	2 18 14 28 19 17	0.12 2.60 0.95 4.08 0.75 1.26	17 27 30 48 48	
Total	77	. 53}	20	751	38	401	20	9.76	41	
Laborers	77	. 60	5	10	2	6	1	0.13	40	
Loaders	77 77 77 77 77 77	. 58 . 62 . 664 . 675 . 755 . 904	1 2 1 13 1 1	35 41 12 694 49 65 14	35 21 12 53 49 65 14	20 25 8 469 37 59	20 13 8 36 37 59 14	0.45 0.53 0.16 9.01 0.64 0.84 0.18	44 47 57 58 70 77	
Total	77	. 691	20	910	46	632	32	11.81	51	
Markers	77 77 77 77	.524 .82 .57 1.914	2 2 1 1	82 11 7 75	41 6 7 75	43 9 4 144	22 5 4 144	1. 07 0. 14 0. 09 0. 97	46 63 44 148	
Mine bosses	77	1.034	3 3	209 206	70 69	216 261	72 87	2.71 2.68	80	
Total	77	1.15	6	415	69	477	80	5, 39	86	
Mine bosses, assistant Mine boss, chief	77 77	1. 52	6	245 73	41 73	195 111	33 111	3. 18 0. 95	117	
Miners	77	a . 984 a 1. 11	94 40	4, 331 2, 054	46 51	a 4, 258 a 2, 277	45 57	56, 25 26, 68	76 85	

s From the earnings here given miners bought their own powder at a cost of 25 cents per week.

TABLE XII.-ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued T .- Bituminous Coal: CONTINENT OF EUROPE-Concluded.

ESTABLISHMENT No. 156-Concluded.

	Work-	Actual daily earn- ings, or daily		ctual co	nditio	n for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the period.	rate nearest to average	Dif-	Day	of done.	Earn	ings.	Neces-		
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Average.	em- ployés.	earnings per em- ployé.	
Miners' helpers	77	\$0.34 .343 .434 .49 .50 .58 .60 .614 .62 .634 .83	11212121143111	12 43 122 65 127 48 113 65 64 161 192 45 18	12 43 61 65 64 48 38 65 54 40 64 45 18	94 15 53 31 63 24 66 39 33 100 122 20 15 8	34 15 27 31 32 24 22 39 33 25 41 30 15 8	0. 18 0. 56 1. 58 0. 84 1. 65 0. 62 1. 47 0. 84 0. 70 2. 09 2. 49 0. 58 0. 52 0. 23 0. 12	\$26 27 23 37 38 39 45 46 47 48 49 51	
Total	77	. 56	23	1,074	47	603	26	13, 93	43	
Qilers	77	.29	3	72 34	24 34	21 17	17	0.94	22 39	
Total	77	.36	4	106	27	38	10	1.38	28	
Pickers	77	. 251	3	218	71	54	18	2.77	20	
Pumpmen	77	. 58	1	79 70	79 70	46 42	46 42	1.03 0.91	45 46	
Total	77	. 59	2	149	75	88	44	1.94	45	
Sorters	77 77	.29 .51	1 5	73 166	73 33	21 86	21 17	0. 95 2. 16	22 40	
Total	77	. 45	6	239	40	107	18	3.11	34	
Sorters, chief Stablemen Watchman	77 77 77	. 60 . 61 5 . 96	3 5 1	160 159 78	53 32 78	97 98 75	32 20 75	2.08 2.06 1.01	47 47 74	
The establishment		.81	472	20, 822	44	a 16, 844	36	270.40	62	

ESTABLISHMENT No. -

[No statement of cost of production for this establishment is shown in Table VIII.]

Engineer	52	\$0.73	1	59	50	\$43	\$43	1.13	\$3 1
Firemen	52	. 701	2	104	52	73	37	2.00	37
Gallery cutters	52	. 93	6	285	48	271	45	5,48	41
Laborers	52	. 51	2	61	31	81	16	1. 17	21
Loaders	52	. 491	7	812	45	154	22	6,00	21
	52	. 491 . 614		132	44	85	28	2.54	• 20
	52	.94	1	37	37	35	35	0.71	**************************************
Total	52	. 57	11	481	44	274	25	9. 25	30
Machinist	52	. 814	1	52	52	42	42	1,00	49
Miners	52	b . 874	54	2,090	39	b 1, 830	34 1	40.20	40
Overseer	53 52	. 83	1	60	60	50	50	1. 15	41
The establishment		.82	78	8, 192	41	0 2, 614	34	61, 38	41

s In addition \$508 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 211.

No information in regard to miners' supplies.

The earnings here shown are for only a part of the employée, but they are thought to be fairly representative.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. U.—Bituminous Coni: GREAT BRITAIN.

ESTABLISHMENT No. 170.

	Work-	Actual daily earn- ings,or daily	A	ctual co	adition	for peri	od.	works	ition if nen had inuous oyment.
Occupation.	days in the period.	rate nearest to average	Dif-	Day		Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Average.	em- ployés.	earninge per em- ployé.
Air-way men	91 91	\$1.25 1.38½	6 9	323 675	54 75	\$403 936	967 104	3.55 7.42	\$114 126
Blacksmiths	91 91 91 91 91 91	.76½ .85 1.02 1.06½ 1.15 1.33	1 1 1 1 1 1	78 75 76 80 74 87	78 75 76 80 74 87	62 65 80 87 87 115	62 65 80 87 87 115	0.86 0.82 0.84 0.88 0.81 0.96	73 78 96 96 107 120
Total	91	1.05	6	470	78	496	83	5, 17	06
Blacksmiths' helpers	91 91	.423 .503	1	327 80	82 80	143 48	36 48	3. 59 0. 88	1 40
Total	91	.47	5	407	81	191	38	4.47	43
Boilersmith Bricklayer Bricklayer's helper	91 91 91	1.53½ 1.42± .81	1 1 1	90 59 79	90 59 79	138 84 64	138 84 64	0. 99 0. 65 0. 87	140 130 74
Bye-workmen	91 91 91 91 91 91 91	.664 .724 .784 .86 .93 1.214 1.32	2 1 7 1 1 7 4	108 72 311 73 63 505	54 72 41 73 63 72 22	73 53 248 63 57 627 115	37 53 35 63 57 90 29	1. 19 0. 79 3. 42 0. 80 0. 69 5. 55 0. 98	6: 6: 7: 7: 8: 11:
Total	91	1.01	23	1, 221	53	1, 236	54	13, 42	91
Capetan men	91 91 91	.08 .81 1.10	1 1 1	83 70 56	83 70 56	58 58 62	58 58 62	0. 91 0. 77 0. 62	61 71 101
Total	91	. 85	3	209	70	178	59	2, 30	75
Carpenters	91 91 91 91	.931 .98 1.191 1.334	1 1 1 1	77 73 67 54	77 73 67 54	71 71 80 72	71 71 80 72	0.85 0.80 0.74 0.59	84 86 105 121
Total	91	1.08)	4	271	68	294	74	2.98	98
Coal inspector	91	1. 251	1	78	78	07	97	0, 86	112
Deputy overmen	91 91	1.36 1.48	8 5	619 437	77 87	861 663	108 133	6. 80 4. 80	127 138
Total	91	1.44	13	1,056	81	1,524	117	11,60	131
Drivers	91	. 86	2	85	43	73	37	0.93	18
Elevator tenders	91 91 91 91 91 91	. 384 . 426 . 554 . 64 . 70 . 894	1 1 1 1 1 1 1	75 70 81 69 78 78	75 70 81 69 78 78	30 31 46 45 55 70	30 31 46 45 55 70	0.82 0.77 0.89 0.76 0.86 0.86	36 40 52 59 64 82
Total	01	. 61	6	451	73	277	46	4. 96	56
Enginemen, fan	91 91	1. 101 1. 274	1	77 76	77 76	87 98	87 98	0, 85 0, 84	103



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TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. U.—Bituminous Coal: GREAT BRITAIN—Continued.

ESTABLISHMENT No. 170-Continued.

	Work-	Actual daily earn- ings, or	. 4	ctual co	editio	n for pori	od.	workn	ition if nen had nuous
Occupation.	ing days in the period.	daily rato nearcst to average	Dif-	Days work	of done.	Earni	ngs.	Noces-	Consequent
		daily earn- ings.	cm- ploy- ós.	Total.	age.	Total.	Aver-	eary om- ployés.	everage carnings per em- ployé.
Mechanics	91 91	\$0. 25 1. 33	1 1	80 82	80 82	\$70 109	\$76 109	0. 88 0. 90	\$80 121
Total	91	1. 101	2	163	81	179	90	1.78	101
Mechanics' shop boy	91	. 53}	1	74	74	38	39	0.81	47
Miners	91 91 91 91 91	1.311 1.56 1.79 1.991 (6)	65 198 110 6 83	3, 430 11, 063 5, 865 338 (a)	53 56 53 56 (a)	4, 504 17, 235 10, 481 673 2, 696	69 87 95 113 116	37. 69 121. 57 64. 34 - 3. 71 (6)	119 142 163 182 (a)
Total	91	(b)	411	(8)	(8)	36, 611	89	(8)	(6)
Plate layers	91 91	. 85 1. 02	2	151 81	76 81	132 85	96 85	1. 66 0. 89	80 95
Total	91	. 934		232	77	217	72	2.55	85
Plumber	91	1. 23	1	79	79	100	100	0.87	115
Rippers	91 91	1.091	7 9	102 528	15 50 75	11 2 771	16 86	1. 12 5. 80	100
	91 91	1.46 1.701 2.13	2	675 150	75 75	1, 151 319	128 160	7. 42 1. 6 5	155 194
Total	91	1.61	27	1, 456	54	2, 353	87	15. 99	147
Road repairers	91 91	1.20 1.48	6	450 441	75 74	510 635	90 106	4. 95 4. 83	100 130
Total	91	1.81	12	894	75	1, 175	98	9. 83	120
Road repairers' helpers Roadman Sawyer	91 91 91	.48) (a) 1.06	4 1 1	300 (a) 67	75 (a) 67	152 70 71	38 70 71	3. 30 (a) 0. 74	(a) #
Screeners	91 91	. 30 . 32 . 35	1 2	73 79	73 40	22 25	22 13	0.80 0.87	27
	91 91	. 38	6 2	404 125	67 63	142 49	24 25 33 39	4.44 1.87	36
	91 91	. 42	1	76 74	76 74	33 39	33	0. 84 0. 81	48
	91 91	. 68	2 2	97 117	49 50	59 81	30 41 56 35	1. 07 1. 29	55 61
	91 91	. 74	1	76 45	76 45	56 35	56 35	0. 84 0. 49	67
	91 91 91	. 81 . 89	10	62 756 217	62 76 43	51 663 200	51 67 40	0.68 8.71 2.38	82 86 40 48 55 61 67 71 78 80
Total	91	.06	35 25	2, 201	63	1, 457	42	24, 19	60
Shaftman	91	1. 42)	1	90	90	129	129	0.00	130
Staithmen	91 91 91	. 85 . 931 1. 06	1 1 1	77 76 70	77 76 70	G8 70 74	G8 70 74	0. 85 0. 84 0. 77	80 84 96
Total		. 95		223	74	212	71	2.48	87
Staithmen's helper	91	. 351	1	76	76	27	27	0.84	32
Surveyor, assistant	91 91	2. 59 1. 21	1	78 78	78	210 96	210 96	0.86 0.86	245 112

H. Ex. 265---29

U.-Bituminous Coal: GREAT BRITAIN-Concluded.

ESTABLISHMENT No. 170-Concluded.

Occupation.	Work-	Actual daily earn- ings, or daily		ctual co	od.	Condition if workmen had continuous employment.			
Occupation.	days in the period.	rate nearest to	ferent	ent work done.		Earnings.		Neces-	
		daily earn- ings.	ploy- és.	Total	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Timbermen	91	\$0.93 1.21§	1	81 78	81 78	\$77 95	\$77 95	0. 89 0. 86	487 111
Total	91	1.08	2	150 298	80 75	172 102	86 20	1.75	98
Wagon builders and repairers.		. 98 1. 024 1. 12 1. 214 1. 33	2 1 1	155 63 63 76 78	78 63 63 76 78	151 65 72 95 103	76 63 72 95 103	1.70 0.69 0.69 0.84 0.86	89 94 104 114 120
Total	91	1.111	6	435	73	486	81	4.78	102
Wagon builders' shop boy Watchman Water men Weighman		.51 .974 .784 1.214	1 1 2 1	77 91 59 78	77 91 30 78	40 91 45 97	40 91 23 97	0. 85 1. 00 0. 65 0. 86	47 91 69 113
The establishment		(a)	771	(a)	(a)	b 59, 194	77	(a)	(a)

W.—Coke: United STATES.

ESTABLISHMENT No. 6.

Carpenter	79 92	\$2.40 1.00	1	77 200	77 50	\$185 200	\$185 50	0. 97 2. 17	\$190 92
Cleaners, track	92 92 92	.50 .75 1.00	1 1 13	13 15 488	13 15 38	7 11 488	7 11 38	0. 14 0. 16 5. 30	54 67 97
Total	92	. 98	15	516	34	506	34	5. 60	91
Coke bosses	92 92	1. 25 2. 60	1	45 88	45 88	56 230	36 230	0.49 0.96	114 240
Total	92	2.15	2	133	67	286	143	1.45	19
Drawers	92 93	1.70 1.00	104	2, 419 287	c 23	4, 110 287	40 36	26. 29 3. 12	150 93
Dumpers	92 92	1. 15 1. 50	2	119 84	60 84	136 125	68 125	1. 29 0. 91	10: 13
Total	92	1.281	3	203	68	261	87	2, 20	11
Engineers, coal crusher Feeders, coal crusher	92 92	1.67½ 1.00	2	93 43	46 22	151	77 22	1. 00 0. 47	154
Foremen	92 92	2. 50 3. 00	1	91	91	10 273	10 273	0.04 0.99	230 276
Total	93	2.98	2	95	48	283	143	1. 03	274
Laborers	92 92 92	.50 .75 1.00	2 2 82	64 46 1, 293	32 23 16	32 34 1, 293	16 17 16	0, 70 0, 50 14, 05	44 64 92
Total	92	. 97	86	1,403	16	1,359	16	15. 25	81

s No total can be made for the reason shown in the preceding footnote a.

b The earnings here shown are for three months only. The statement for this establishment on page
211 is for six months.

s The time of drawers has been estimated on the basis of four overs per day.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. V.—Coke: UNITED STATES—Continued.

ESTABLISHMENT No. 6-Concluded.

Occupation	Work-	dany	A	ctual co	ondition	for peri	od.	Condition if workmen had continuous employment.	
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days		Earn	ngs.	Neces-	
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Laborers, track	92 92 92 92	\$1.00 1.00 1.00 1.25	1 1 1 2	94 96 54 91	94 96 54 46	\$94 96 54 114	\$94 96 54 57	\$1.02 1.04 0.59 0.09	\$02 92 92 115
The establishment		1.385	234	5, 803	25	a 8, 032	34	63. 19	127

Blacksmith	313 313 313	\$1.90 1.45 1.75	1 2 1	228 299 234	228 150 234	\$436 429 411	\$436 215 411	0,73 0,96 0,75	\$599 419 550
Cartmen	313 313	1.35 1.50	6	674	112	918 9	153 9	2. 15 0. 02	426 470
Total	313	1.36	7	680	97	927	132	2.17	427
Cartmen and drawers	313	1. 45	2	201	101	292	146	0. 64	455
Chargers	313 313 313	1.70 1.80 1.83	1 2 1	25 418 224	25 209 224	43 754 496	43 377 406	0.08 1.34 0.72	538 565 567
Total*	313	1.80	4	667	167	1, 203	301	2.14	565
Charger and watchman	313	1. 683	1	293	293	494	494	0.04	528
Drawers	313 313 313 313 313 313 313	1.30 1.55 1.841 2.07 2.26 2.601 2.721	39 57 36 51 17 5	2, 515 4, 389 2, 787 5, 123 1, 364 322 271	64 77 77 100 60 64 54	3, 302 6, 812 5, 143 10, 603 3, 080 839 739	90 120 143 208 181 168 148	8. 04 14. 02 8. 90 16. 37 4. 36 1. 03 0. 87	436 486 578 648 707 816 854
Total	313	1.83	210	16,771	80	30, 718	146	53, 59	573
Drawers and laborers	313 313 313 313	1. 40 1. 521 3. 26 2. 32	1 1 1	63 209 313 301	32 209 313 301	94 319 1,020 609	47 319 1, 020 699	0. 20 0. 67 1. 00 0. 96	467 478 1, 020 727
Laborers	313 313 313 313 313 313	1. 00 1. 25 1. 30 1. 35 1. 45 1. 80	3 22 14 5 2	109 2, 076 2, 190 726 44 250	36 94 156 145 22 250	2, 615 2, 840 983 63 451	36 119 203 197 32 451	0.35 6.63 7.00 2.32 0.14 0.80	313 394 406 424 448 565
Total	313	1.31	47	5, 395	115	7, 061	130	17. 24	410
Levellers	313 313	2. 21 2. 37	5	1,012 763	202 153	2,234 1,808	447 362	3, 23 2, 44	691 742
Total	313	2. 271	10	1, 775	178	4, 042	404	5. 67	713
Masons	313	2.50 2.70	1 6	19 775	19 129	48 2, 064	48 341	0, 06 2, 48	791 834
Total	313	2. 66	7	794	113	2, 112	302	2.54	833

a The earnings here shown are for three months only. The statement for this establishment on page 236 is for one year.

V .- Coke: UNITED STATES-Continued.

ESTABLISHMENT No. 13-Concluded.

Occupation.	Work-	antiy		Actual condition for period.					Condition if workmen had continuous employment.		
	days in the period.	daily	Dif- ferent			Earnings.		Neces-	Conse- quent		
			em- ploy- és.	Total.	Aver- age.	Total.	Average.	em- ployés.	earnings per em- ployé.		
Masons' belpers Teamsters Watchman	313 313 313	\$1.30 1.35 1.60	7 2 1	798 358 350	114 179 350	\$1, 039 482 560	\$148 241 560	2.55 1.14 1.12	\$408 421 501		
The establishment		1.76	307	29,729	97	52, 338	170	95.01	551		

ESTABLISHMENT No. 19.

Ashmen	313 313	\$1.40 1.45	3	69 446	23 149	\$96 648	\$32 216	0.22 1.42	\$135 455
Total	313	1.441	6	515	86	744	124	1.64	452
Ashman and laborer	313 313 313 313 313	1.32½ 2.75 1.25 2.50 1.50	1 1 1 1 1	52 201 202 120 166	52 201 202 120 166	69 552 252 300 249	552 252 300 249	0. 17 0. 64 0. 65 0. 38 0. 53	415 860 390 783 470
Drawers	313 313 313 313 313 313	1. 32 1. 53 1. 741 1. 955 2. 245 2. 471	26 35 33 10 2	2, 315 4, 114 5, 192 1, 115 202 191	89 118 157 112 101 191	3, 032 6, 303 9, 073 2, 179 453 473	117 180 275 218 227 473	7. 40 13. 14 16. 59 3. 56 0. 05 0. 61	413 480 547 612 702 775
Total	213	1.64	107	13, 129	123	21, 533	201	41.95	513
Drawers and forkers Drawer and laborer	313	1. 47 1. 93	1	388 14	37 14	571 27	143 27	1. 24 0. 04	461 601
Engineers	313 313	1.75 2.25	1	98 321	98 321	172 725	172 725	0. 31 1. 03	549 707
Total	313	2.14	2	419	210	897	449	1.34	670
ForemanForemen, assistant	313 313	2.49 2.25	1 2	313 304	313 152	780 684	780 342	1.00 0.97	780 704
Forkers	313 313 313 313	1.33 1.48 1.821 2.00	5 9 1 1	206 461 34 6	41 51 34 6	274 683 63 12	55 76 62 12	0.66 1.47 0.11 0.02	416 464 571 626
Total	313	1.46	16	707	44	1, 031	64	2. 26	456
Levellers	313	1. 595 2. 466	1	245 1, 068	245 267	391 2, 635	391 659	0. 78 3, 41	500 772
Total	313	2.30}	5	1, 313	263	3, 026	605	4.19	721
Masons l'umpmen	313 313	2.75 1.75	3 2	31 250	10 125	84 450	28 225	0. 10 0. 80	848 563
The establishment		1.721	154	18, 124	118	a 31, 249	203	57. 90	540

s In addition \$3,522 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 236.

TABLE XII. - ACTUAL AND THEORETICAL TIME AND EARNINGS - Continued.

V.—Coke: UNITED STATES—Continued.

ESTABLISHMENT No. 23.

ESTABLISHMENT NO. 93.												
	Work-	Actual daily earn-ings, or daily rate		ctual oc	mditiv	a for peri	od.	works conti	ition if nen had nuous yment.			
Occupation.	days in the period.	Desreet	Dif-	Day:		Earni	ngs.	Neces-	Conse- quent			
		daily earn- ings.	ploy-	Total.	Aver-	Total.	Aver-	em- ployés.	earninge por em- ployé.			
BlacksmithBlacksmith's helperChargersChargers and drawers	213 313 313 313	\$2.25 1.00 1.00 1.23}	1 1 12 2	200 17 1, 510 191	200 17 125 96	\$449 17 1, 532 236	\$449 17 128 118	0. 64 0. 05 4. 82 0. 61	\$703 313 318 318 387			
Drawers	313 313	1.32½ 1.50	4 45	130 4, 394	33 98	172 6, 545	43 145	0. 42 14. 04	414 456			
Total	313	1.48}	49	4, 524	92	6, 717	137	14.46	465			
Drawers and forkers	313	L 194	4	623	156	743	186	1.99	873			
Drawers and laborers	313 313	1. 16 1. 274	11 7	783 434	67 61	850 541.	77 77	2.34 1.35	363 399			
Total	313	1. 20	18	1, 157	64	1, 391	77	3, 69	376			
Foreman, assistant	318 313 318 313	2. 141 1. 50 1. 00	1 29 42	216 246 2, 648 1, 1038	814 216 91 46	673 369 2, 651	673 300 91 46	1.00 0.79 8.46 6.19	671 470 313			
Laborers	365 313	1.00 1.00	1 2	311 188	311 94	1, 941 811 75	311 38	0. 85 0. 60	313 365 125			
The establishment	_	1. 234	163	13, 567	85	17, 105	105	44. 15	387			
**************************************	E	STABLI	SHME	NT No	.29.			.1				
Chargers	313 ;313 313	\$1. 25 1. 264 1. 13	59 1	233 2, 989 110	167 50 110	\$430 8,712 123	\$215 63 128	1. 06 9. 39 0. 35	\$464 395 250			
Elevator tenders	313 313	1.00 1.65	2	6	3 8	6 13	3 13	0. 02 0. 03	313 509			
Total	313	1.35	3	14	5	19	6	0.05	435			
Engineers, stationary	313 313	1. 50 2. 00	1	58 219	58 219	86 416	86 416	0. 19 0. 70	464 593			
Total	313	1.81	2	277	139	502	251	0. 89	567			
Foreman, assistant	313 313	3. #3 <u>1</u> 1. 50	1	313 219	313 219	1, 200 342	1, 200 34 2	1.00 0.70	1, 200 430			
Laborers	313 313 313 313	1.00 1.10 1.15 1.25	4 3 48	83 44 36 1, 440	21 15 12 30	06 49 42 1,803	22 16 14 28	0.27 0.14 0.12 4.60	317 349 365 393			
Total	213	1. 234	58	1, 605	28	1, 980	34	5. 13	336			
Levellers	313	1. 65	2	207	104	340	170	0.66	514			
Loaders	313 313 313 313	.75 1.00 1.10 1.25	1 13 13	8 13 206 510	8 13 16 43	6 18 228 637	6 13 18 53	0. 03 0. 04 0. 66 1. 63	233 313 346 391			
Total	313	1. 20	27	737	27	884	33	2.36	875			
Mason Watchman	313 365		1	19 60	19 69	66 6 6		0, 06 0, 19	1, 067 455			

V .- Coke: UNITED STATES-Concluded.

ESTABLISHMENT No. 98-Concluded.

	Work-	Actual daily carm-ings, or daily rate	1	etual or	mdition	a for peri	ođ.	works	ition if non had innone syment.
Occupation.	days in the period.	to	Dif-	Deyr work	of done.	Earn	ags.	Noos-	Conse
		daily earn- ings.	ploy-		Aver-	Total.	Aver-	ployés.	per em- per em- ployé.
Water boys	313 313	\$6. 50 . 75	2 1	105 91	53 46	962 72	\$26 36	0.34 0.39	\$185 348
Total	313	.63	4	196	49	126	81	0.63	190
The establishment		1.30}	163	7, 038	43	9, 806	61	22.47	436

ESTABLISHMENT No. 29.

Chargers Drawers Engineer, stationary Insteman Laborers Mason Repairer, oven Watchman	365 365 365 365 813 313	\$1.29 1.29 1.05 2.00 1.10 3.50 1.50	18 1 1 10 1 1	1, 226 4, 752 301 364 572 32 292 828	307 264 801 364 57 32 292 328	\$1, 471 5, 703 816 728 629 111 437 804	\$368 317 316 728 63 111 437 394	3, 36 13, 02 0, 83 1, 60 1, 57 0, 10 0, 93 0, 90	\$438 438 323 730 461 1,006 460 438
The establishment	•••••	1. 26	87	7, 867	213	a 9, 788	265	21. 70	451

W .- Coke: CONTINENT OF EUROPE.

ESTABLISHMENT No. -

[Ne statement of cost of production for this establishment is shown in Table IX.]

Boiler washer	365 365 365	\$0. 481 1. 00 . 83	1 1 2	63 2 6	63 2 8	\$30 2 5	\$30 2 3	0. 17 0. 01 0. 02	\$174 363 304
Chargers	365 363 365 365	. 25 . 86) . 58 . 68)	1 1 2 3	238 276 73 1, 014	228 276 73 338	59 101 38 687	59 101 38 229	0. 65 0. 76 0. 20 2. 78	96 134 190 247
Total	365	. 551	6	1, 601	267	885	148	4. 39	202
Cleaner Ceke acreener and laborer Danbers Engineer Fireman Forkers Laborers Laborer and nason Leveller	365 365 365 365 365 365 365 365 365	. 31 . 52 . 29 . 344 . 50 . 684 . 33 . 664	1 1 2 1 3 7 1 1	53 346 675 317 377 1,007 532 3	53 3:6 338 317 377 330 76 8	16 189 189 103 187 690 170 2 417	16 180 93 108 187 230 24 2417	0. 15 0. 95 1. 85 0. 87 1. 03 2. 76 1. 46 0. 01 0. 83	110 190 103 124 181 250 117 243
Loadern	365 365 365 365 365	. 31 . 34 . 48) . 58 . 69	13 1 1 1 1	1, 668 340 6 13 337	128 340 6 12 337	515 115 3 7 233	40 115 3 7 233	4. 57 0. 93 0. 02 0. 03 0. 92	112 123 183 213 252
Total	365	.37	17	2, 363	139	873	51	6.47	135

a In addition \$668 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 236.

W .- Coke: CONTINENT OF EUROPE-Concluded.

ESTABLISHMENT No. - - Concluded.

	Work-	dauly	A	ctual co	ndition	for perio	od.	Condition if workmen had continuous employment.	
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work		Earni	ngs.	Neces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Aver-	em- ployés.	per em- ployé.
Machinist Mason Mesaurer Pickers Porter Watchman Water tenders	365 365 365 365 365 365 365 365	\$1.00 .60½ .52 .19½ .44½ .38½ .25	1 2 1	30 18 294 338 309 365 150	30 18 294 169 309 365 50	\$30 13 153 66 137 141 38	\$30 13 153 33 137 141 13	0. 08 0. 05 0. 81 0. 93 0. 85 1. 00 0. 41	\$365 264 190 71 162 141 92
Weighmen	363 365	.481 .671		19 19	19 19	13	9 13	0. 05 0, 05	173 250
Total	365	.58	2	, 38	19	22	11	0,10	211
The establishment		.473	57	9, 101	161	4, 354	76	25, 20	173

X .- Iron Ore: UNITED STATES.

ESTABLISHMENT No. 1.

Blacksmiths Blacksmith and laborer Blacksmiths' Lelper Car leveller	313 313 313 313	\$2.00 1.50 1.60 1.25	2 1 1 1	157 2 28 182	79 2 28 182	\$314 3 44 227	\$157 3 41 227	0. 50 0. 01 0. 09 0. 56	\$626 470 492 300
Carpentera	313	2.00 2.25	2	175 21	88 21	350 46	175 46	0.56 0.07	626 686
Total	313	2.02	3	196	65	396	132	0. 63	632
Clerks and weighmen	365 365 365 365	1. 47 1. 511 1. 661 1. 851	2 1 1 1	315 117 113 233	158 117 113 233	463 177 188 432	232 177 188 432	0.86 0.32 0.31 0.64	536 552 607 677
Total	365	1.62	5	778	156	1, 260	252	2. 13	591
Drivers	313 313 313 313 313	.75 .921 1.00 1.121 1.25	7 1 6 1 15	636 184 676 11 1, 049	94 184 113 11 70	492 170 686 12 1, 304	70 170 114 12 87	2. 10 0. 59 2. 16 0. 04 3. 35	235 289 318 341 369
Total	313	1.031	30	2, 576	86	2, 664	89	8.24	324
Driver and laborer Engineers Engineer and laborer Fireman	313 313 313 313	1. 12½ 2. 00 1. 51½ 1. 25	1 1 1	8 286 76 38	8 143 76 38	572 115 48	9 286 115 48	0, 03 0, 91 0, 24 0, 12	352 626 474 395
Laborers	313 313 313 313 313	1.00 1.10 1.10 1.25 1.50	12 6 114 1	2 420 126 2,551 200	35 21 22 209	1 423 145 3, 187 829	1 35 24 28 329	0. 01 1. 34 0. 40 8. 15 0. 67	157 315 360 391 493
Total	313	1, 231	134	3, 308	25	4, 085	30	10, 57	387
Laborers and timbermen Laborer and trammer Mine boss Miners	313 313 365 313	1, 33½ 1, 40 3, 56 (a)	2 1 1 (b)	316 10 365 (a)	158 10 365 (4)	422 14 1,300 36,837	211 14 1,300 (b)	1.01 0.03 1.00 (a)	418 438 1, 300 (a)

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b Number of employes not given.

X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 1-Concluded.

Occupation.	Work-	GENTA		ctual oc	Condition if workmen had continuous employment.					
Oscupation.	days in the	rate pearest to	Dif-	Day:		Bera	age.	Noces-	Conso-	
		average daily eara- inga.	ploy.	Total.	Aver-	Total.	Averago.	eary ployés.	enratage per em- ployé.	
Timbermen	313 313 313 313	\$1.40 1.50 1.60 2.00	4 2 1 6	203 46 35 983	51 23 25 164	\$282 60 39 1, 954	\$71 \$5 39 \$26	0, 66 0, 15 0, 66 3, 15	\$436 470 486 621	
Total	818	1.86	13	1, 250	97	2, 314	180	4.03	503	
Trammers Truckman Weighman	313 313 313	1. 50 1. 50 1. 50	7 1 1	591 235 25	85 235 25	800 253 38	127 253 38	1.90 0.75 0.08	4 00 470 476	
The establishment		(a)	(a)	(a)	(a)	51, 935	(4)	(4)	(e)	

ESTABLISHMENT No. 19.

Blacksmith	313	1.75	1	298 (25	206 279	9606 936	9609 44d	0. 93 1. 78	\$736 888
Carpenters	313 313	1. 20 2. 50	3	314 558	75 274		136	0.72	80) 78)
Total	313	2, 18	1	5.4	123	1,001	====	1. 60	663
Drillers	313	1.59 2.00	1 2		31	41 121	41 61	8. 69 8. 19	673 021
Treal	313	1.84	3	63	:9	165	54	4.23	570
Dry boys Engracers	312 313	1.00 2.00	:	307 612	151 3.6	30: 1, 135	154 53e	0. 95 1. 95	313 611
Firemen	213 213 313	1.65 1.73 1.86	5 2 1	203 303	41- 53- 18:	335 301 235	67 446 336	0.63 1.64 0.55	517 545 561
Total	313	1.73	-		:::	:. 552		2.57	543
Perenas engineers	3:3 3:5	2 co 1 co	13	317 .4	3:3	78.° 159	787 14	1. M 6.3.	780 318
Laborers, starbee	3:3 3:5	1. 39 1. 533	3	:29	4:	169 60	6	1. 40 1. 1.	63
	\$1,5 \$2,3 \$2,8	1. 13 2. 43	3 1	87A 454 1,180		723	***	: 13 1 7	
	111 111 111	1.64 1.34	***	×.	2.5	: 81 323		L 29 L Br L 12	34 34 34
₹1 %	3.3	14:	=	1.34		1 122	:4		-
aderica embergreend	1:3 t	: 7	2	1.34	54	::, 142	344	= *	234
The second second	3;3 ;;3 5;3	. N 	**	ide del	 76	110 (41)	3.5 2.70 2.70	L 7	1363
1754	-1,3		<u> </u>		.	: •3			

A No were not be made by the present who we do not presently instructed

X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 12-Concluded,

	Work-	Actual daily earu- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if nen had nuous yment.
Occupation.	days in the period.	rate nearest to	Dif- ferent	Day work o	s of lone.	Earni	ngs.	Neces-	Consequent
		daily earn- ings.	em- ploy- és.	Total.	Aver- age.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Masons	313 313	\$3. 20 4. 00	1	5 10	5 10	\$16 40	\$16 40	0. 02 0. 03	\$1,002 1,252
Total	313	3.73	2	15	8	56	28	0.05	1, 169
Mine boss	313	4.79	1	313	313	1,500	1, 500	1.00	1, 500
Miners	313 313 313 313	2. 17 2. 37 2. 524 3. 05	9 75 11 1	883 12,904 1,175 20	98 172 107 20	1, 915 30, 590 2, 966 61	213 408 270 61	2, 82 41, 23 3, 75 0, 06	679 742 790 953
Total	313	2.37	96	14, 982	156	35, 532	370	47.86	742
Pit bosses	313 313	2.50 1.80	2 2	509 672	300 336	1, 408 1, 225	749 613	1. 91 2. 15	783 571
Timbermen	213 313	1.85 2.35	2	315 237	158 237	586 557	293 557	1.01 0.76	582 736
Total	313	2.07	3	552	184	1, 143	381	1.77	648
Water boys	313	1. 20	2	595	298	708	354	1.90	372
The establishment		2,674	265	32,313	122	66, 984	253	103. 25	649

ESTABLISHMENT No. 41.

Blacksmith	313	\$2.03	1	313	313	\$636	\$636	1.00	\$636
Blacksmith's helpers	313 313	1.00 1.25	1	47 102	47 102	48 127	48 127	0.15 0.33	320 390
Total	313	1.17}	2	149	75	175	88	0.48	368
Brakeman	313 313 313 365	1.50 2.00 1.60 1.641	1 1 1 1	63 47 65 326	63 47 65 326	95 93 104 535	95 93 104 535	0. 20 0. 15 0. 21 0. 89	472 619 501 599
Engineers	365 313 313 313	1.31½ 1.35 1.50 1.60	1 1 1	361 272 113 302	361 272 113 302	474 362 169 482	474 362 169 4e2	0. 99 0. 87 0. 36 0. 96	479 417 468 500
Total	330	1, 42	4	1,048	262	1, 487	372	3.18	468
Engineers and miners Fireman and miner	313 313 313	1. 22½ 1. 35 2. 00	1 1	246 232 301	123 232 301	301 313 601	151 313 601	0.79 0.74 0.96	383 422 625
Miners	313 313 313 313	. 90 1. 00 1. 10 1. 15	17 137 1	369 1, 175 14, 539 277	123 69 106 277	328 1, 211 15, 832 323	100 71 116 323	1. 18 3. 75 46. 45 0. 58	278 323 341 365
Total	313	1.08	158	16, 360	104	17, 694	112	52. 26	339
Miner and weighman Stableman	313 365	1.18	1	207 354	207	214 345	244 845	0, 66 0, 97	369 356

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS.—Continued. X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 41—Concluded.

-	Week-	Actual daily earn- ings, or daily	4	etual or	aditio	for peri	od.	verk	ition if see had seems yment.
Occupation.	ing days in the period.	raté mercet to	DII-	Day	of dense.	Esta	ngs.	Moose-	Const
,			tri	Total.	Aver-	Total	age.	ployés.	hole but on- entageds managed
Water boys	313	\$4.55 .75	3 2	361 334	100 163	\$1.05 351	955 126	0.96 1.04	9173 262
Total	313	. 06)	5	625	125	416	80	2.00	300
Weighman	318	L.89	1	190	196	200	200	. 4.0	. 491
The establishment		1.13)	181	20, 526	113	23, 237	129	65.10	A88

ESTABLISHMENT No. 42.

			-						
Blacksmiths	313 313	\$1.65 2.89	3	1, 524 918	254 386	82, 515 2, 295	\$419 Tes	15	9637 743
Total	313	1.97	•	2,442	2:11	4,810	534	7. 65	et:
Blacksmith and blacksmiths' helper.	2113	1.63	1	364	304	300	300		
Mackemithe helpers	n m m	1.55 1.60 1.50	1 1	301 365 389	391 396 256		406 427 446	4.57 4.57	
Total	313	1.41	3	905	302	1, 361	-	2.9	463
Brakenen	313	1.50	3	815	363	1, 374	458	1 E	(A)
Carpenters	373	1.50 1.60	:	41.4 5 62	297 281	62 93	306 459	. H	463
Total	323	1.534	4	306	249	1, 550	383	3. 15	461
Conductor	3:3 3:3	1 St.	1	3:3 :8	313 15	3.7 400	9 00 31	F 74	994 530
Drillers and miners	3:3 3:3	1.54	3	45	234 136	- 25	31.2	14 K	*
Total	تبذذ	1_550	=	7 142	===	7. štá	357	14.11	45
Drillers beipers	323	2.30	:	E:	:#	351	:#	2 🕶	123
Deivers	10 10 10 10 10 10 10 10 10 10 10 10 10 1	のない。		174 1, 711 274 384 516 184 1, 257 1, 166 552		10 128 128 124 126 126 127 126 127 128	**************************************	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
Ixai	37.1		-	- 2	ie.	1, 157	, u	=3	35
Drimmer and miners	3:3	: ::	2	ಚಿತ	:39	نف	243	1.34	3
Zagames	317 313	1 M 1 M	:	1, f2.5 342	3:0 :-:	. w	*	3, 6 	4
Txx	212	1.33		., K.	- X		<u> </u>	15	•
Engineer, ar manpresser Engineer, occumente	765 1117	1. 55 1. 55	į	بر تروز	71. 2:	**	7 :	1.5	**

X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 49-Continued.

	Work-	danly	A	ctual co	ndition	for period	od.	works	ition if nen had nuons yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of lone.	Earni	ngs.	Noces-	Conse- quent average
		daily earn- ings.	em- ploy- és.	Total.	Aver-	Total.	Aver- age.	em- ployés.	per em- ployé.
Engineers, stationary	313 313 313	\$1.00 1.50 1.75	1 2 1	300 673 320	300 338 320	\$285 1,013 559	\$285 507 559	0.98 2.16 1.02	\$297 470 547
Total	313	1. 434	4	1, 295	324	1, 857	464	4.14	445
Engineer and miner	313	1,45}	1	301	301	439	439	0.96	457
Firemen	313 313	1.50 1.60	2	623 979	312 245	928 1, 573	461 393	1.99 3.13	466
Total	313	1.56	- 6	1, 602	267	2,501	417	5.12	489
Fireman, locomotive Firemen and miners	313	1.50	1 3	298 702	298 234	447 1,016	447 339	0.95	470 450
Foremen	313 313 313	1.70 1.75 1.914	1 2 7	316 596 1, 909	316 298 273	533 1,040 2,659	533 520 523	1.01 1.90 6.10	528 546 600
Total	313	1.85%	10	2, 821	282	5, 232	523	9.01	581
Foreman, carpenters	313	2.75	1	287	287	780	780	0.92	800
Foremen, miners	313 313	1.65à 1.92	1 2	291 620	291 310	481 1, 189	481 593	0, 93 1, 98	517 600
Total	313	1. 834	3	911	304	1,670	557	2.91	574
Foreman and miner Laborers Laborer, machine shop Laborers and miners	313 313 313 313	1. 47 1. 15 1. 35 1. 23	133 1 34	284 11, 066 296 6,894	284 83 296 203	418 12, 906 399 8, 480	418 97 399 249	0.91 35.35 0.95 22.03	461 365 422 385
Machinista	313 313 313 313 313	1.70 1.75 2.00 2.25 2.50	1 1 1 1 1	312 306 303 308 321	312 306 303 308 321	530 536 606 693 803	530 536 606 603 803	1.00 0.98 0.97 0.98 1.03	532 548 626 704 783
Total	313	2.043	5	1,550	310	3, 168	634	4.96	640
Machinista' helper	313 313 313 313 313 313 313 313 313 313	1. 30 1. 98 1. 35 1. 45‡ 1. 24 2. 25 1. 15 1. 45 2. 00 1. 35	2 203 1 1 1 3 1 4 1	312 51 39, 060 208 340 279 302 852 302 1, 332 361	312 26 149 298 340 279 302 284 302 333 361	406 101 52, 834 434 422 627 361 1, 228 605 1, 807 542	406 51 201 434 422 627 361 409 605 452 542	1.00 0.16 124 79 0.05 1.09 0.89 0.96 2.72 0.96 4.26 0.99	407 626 423 456 388 703 374 451 627 425
Stable boys	305 365	.40 .75	1 2	59 316	59 158	25 237	25 119	0.16 0.87	155 274
Total	305	. 70	- 3	375	125	262	87	1.03	255
Stablemen. Stonecutter and whitewasher . Timbermen. Timberman, boss	365 313 313 313	1.15 1.61 1.35 2.00	7 1 2 1	1, 846 294 575 273	264 294 288 273	2, 122 473 786 545	303 473 393 515	5. 06 0. 94 1. 84 0. 87	420 504 428 625
Tool boys	313 313 313 313	.45 .53 .75 .85	2 4 3 2	344 911 906 350	172 228 302 175	155 500 680 303	78 125 227 152	1.10 2.91 2.89 1.12	235 271

X .- From Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 49-Concluded.

	Work-	Actual daily earn- ings, or daily	4	ctual co	adition	a for peri	ed.	WOI K	Hion of men had invoces syment.
Occupation.	days in the period.	necree:	Dif	Days	of done.	Earn	nge.	Noces-	Conse- quest
		daily carn- ings.	ploy-	Total.	Average.	Total.	Aver-	sary em- ployés.	earnings per con- ploys.
Wagonnakere	\$13 \$13	\$1.50 1.60	1	296 288	206 288	\$143 460	9443 480	0. 95 0. 92	\$600 800
Total	318	1.544	2	584	202	903	452	1.87	494
Watchmea	365	1. 15	2	609	305	706	253	1.67	423
Water beys	313 313 313	.40 .45 .35	24 4	17 4,061 872	9 109 218	1, 829 479	4 76 120	0.05 12.97 2.79	129 141 172
Total	313	.47	20	4, 950	165	2, 215	77	15. 81	146
Whitewasher	213	2. 25	1	11	11	25	25	0.04	711
The establishment	•••••	1.31	w	106, 551	165	a138,491	216	335. GI	413
	E	TABLI	211 7 1	NT No.	. 43.				
BlacksmithsCarponter	213 213	\$1.00 1.50	1	401 172	202		\$333 257	1.29	\$500 600
Drill bays	313 313 313	.30 .75 .20	1 2	236 44 121	61 44 61	135 31 35	33 43	6.82 6.14 6.33	165 235 254
Total	313	. 62	7	421	80	:96	23	2.35	196
Engineere	313 313 313	1.42 1.67 2.40	1	25 25 4	23	339 41 4	339 41 8	6.73 6.74 	470 513 636
Tytal	373	1. 52	3	-33	ii.	258	:29	- 80	CI
Misers	373 373 373	1.39 1.39 1.40	164	964 18. 265 4.6	23 24	14 14. 14 14. 17 1	?; *	1. 7 1. 3 2. 3	37) 607 608
Tues!	2:3	1.3%	168	12 25	*	23K Z	×	M M	-
	\$1,3 \$1,3 \$1,5	: W : W : W	3	34.7 20.5 20.5		est Li	196	と発	4II
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In the contract of the annual property of the contract of the

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. X.—Iron Ore: United STATES—Continued.

ESTABLISHMENT No. 44.

	Work-	Actual daily earn-inga, or daily rate	4	Actual co	aditio	a for peri	od.	works	ition if nen bad inuous yment.
Occupation.	days in the period.	Bearest to average	Dif.	Days work		Earni	ngs.	Noces-	Conse- quent
		daily earn- ings.	ploy-	Total.	Aver- age.	Total	Aver.	em- ployés.	earnings per em- ployé.
Carpenter	217 217 217 217 217 217 217	\$1.35 1.25 2.50 1.25 1.35	1 4 1 24 7	177 513 219 4,075 1,296 210	177 128 219 170 185 210	\$239 641 547 5, 094 1, 750 157	\$239 160 547 212 250 157	0.83 2.36 1.01 18.78 5.97 0.97	\$293 271 543 271 298 162
The establishment		1.30	38	6, 490	171	8, 428	222	29. 91	283
	1	STABL	ISHM	ENT N	o. 45.			_	
Blacksmith	313 318 313	\$2.50 1.75 2.00	1 2 1	163 237 292	158 119 292	\$376 415 563	\$376 20H 583	0, 49 0, 76 0, 93	\$760 548 635
Drivers	813 818 313 813 813	.70 1.25 1.30 1.50 1.02	2 4 2 11 2	325 596 123 532 617	163 150 62 48	223 748 161 793 1,000	117 187 81 72 500	1. 04 1. 91 0. 39 1. 70 1. 97	224 392 410 467 507
Total	318	1. 334	21	2, 195	105	2, 935	140	7.01	419
Drivers and miners Dumpers Dumpers and miners Engineer	813 812 818 818	1. 56 1. 50 1. 55 2. 25	10 3 1	177 1, 092 349 380	89 109 116 300	277 1, 639 541 810	139 164 180 810	0.57 3.49 1.12 1.15	490 470 485 704
Firemen	313 313	1. 6 3 1. 75	1 2	265 406	265 203	435 710	435 355	0.85 1.30	514 547
Total	818	1. 70	*	671	234	1, 145	882	2. 15	534
Гогетав	313	2.30	1	313	313	730	720	1.00	730
Miners	313 313 313	1. 75 1. 50 1. 62	1 9 193	35 892 23, 397	35 99 121	47 1, 239 37, 863	47 149 196	0.11 2.88 74.75	420 470 507
Total	313	1.61	203	24, 324	120	39, 249	193	77. 71	545
Miners and ore cleaners Miner and stableman	313 313	1. 56 1. 87	1	878 25	95 25	500 34	148 34	1.21 0.06	489 426
Miners' helpers	313 313	. 6 0 . 70	1	53 213	53 212	82 145	32 145	0.17 0.68	189 214
Total	313	. 67	2	265	133	177	89	4. 85	200
Ore cleaners Pipe man Scablemen Teamsters (with teams) Timberuen Watchmen	313 312 313 313 313 313	1.50 1.75 .70 3.60 1.89 1.65	0 1 2 4 3 2	548 72 373 58 497 615	61 72 186 15 166 306	823 126 255 178 939 1, 015	91 128 128 43 213 508	1.75 0.23 1.19 0.19 1.50 1.96	470 548 215 934 801 517
The establishment		1. 60	276	32, 993	120	a 52, 823	191	105. 43	501

s In addition, 21 or more contractors were employed, each of whom agreed to get out ore on cars at \$1.10 per ton and was credited at the end of each month with the tennage mined. His men were paid each month by the company and their wages are included in the above. The wages so paid were deducted from the contractor's gross earnings and the remainder was paid to him as his profit. These profits, not appearing here, are included, of course, in the statement for this establishment on page 252.

X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 42-Concluded.

	Work-	Actual daily earn- ings, or daily	A	etual co	ndition	for peri	od.	works	lition of men had innous oyment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Days work	of done.	Earni	ngs.	Neces-	Conse-
		daily earn- ings.	em- ploy- és.	Total.	Average.	Total.	Average.	em- ployés.	earnings per em- ployé.
Wagonmakers	313 313	\$1.50 1.60	1	296 288	206 288	\$443 460	\$413 460	0.95 0.92	\$468 500
Total	313	1. 544	2	584	292	903	452	1.87	484
Watchmen	365	1.15	2	609	305	706	353	1,67	423
Water boys	313 313 313	.40 .45 .35	2 24 4	4, 061 872	9 109 218	1, 829 479	76 120	0.05 12.97 2.79	129 141 172
Total	313	.47	30	4, 950	165	2, 315	77	15. 81	146
Whitewasher	313	2. 25	1	11	11	25	25	0.04	711
The establishment		1.31	640	105, 551	165	a138,491	216	335.61	413
	ES	STABLI	зими	ENT No	43.				-
BlacksmithsCarpenter	313	\$1.60 1.50	2	401 172	202 172	\$646 257	\$323 257	1. 29 0. 55	\$500 468
Drill boys	313 313 313	.50 .75 .80	4 1 2	256 44 121	64 44 61	135 33 98	34 33 40	0.82 0.14 0.39	165 235 254
Total	313	. 63	7	421	60	266	28	1. 35	198
Engineers	313 313 313	1.48 1.67 2.00	1 1	226 25 4	226 25 4	339 41 8	339 41 8	0.72 0.68 0.01	513 626
Total	313	1.52	3	255	85	388	129	0.81	476
Miners	313 313 313	1. 20 1. 30 1. 40	38 148 2	10, 955 416	23 74 208	1, 045 14, 241 576	28 96 288	2.76 35.00 1.33	379 407 433
Total	313	1.294	188	12, 235	65	15, 862	84	39. 09	406
Ore sorters	313 313 313	1.30 1.40 1.50	3 2 3	835 307 345	278 151 115	1, 097 429 514	366 215 171	2.67 0.98 1.10	411 437 466
Total	313	1.37	8	1, 487	186	2, 040	255	4.75	429
Ore sorter and pit boss	313	1. 51	1	222	222	335	335	0. 71	472
Pit bosses	313 313 313	1.50 1.60 1.70	2 4 1	280 642 287	140 161 287	1, 023 487	216 256 487	0.89 2.05 0.92	482 499 531
Total	313	1,601	7	1, 209	173	1, 941	277	3.86	503
Stablemen	313 313	1. 20 1. 30	1	83 59	21 59	101 75	25 75	0. 27 0. 19	381 398
Total	313	1.24	5	142	28	176	35	0.46	388
Strikers	313 313	1. 20 1. 20	31 6	3, 714 449	109 75	4, 823 544	142 91	11. 87 1. 43	· 406 379
The establishment		1.311	262	20,710	79	b 27, 278	104	66.17	412

s In addition, \$1,004 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 252 and 594.

• In addition, \$1,503 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 252 and 504.

TABLE XII. -ACTUAL AND THEORETICAL TIME AND EARNINGS-Continued. X .- Iron Ore: UNITED STATES-Continued.

ESTABLISHMENT No. 51-Concluded.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	d.	works	ition if nen had inuous syment.
Occupation.	days in the	nearest to average		Days work	of done.	Earni	ngs.	Noces-	Conse- quent
		daily earn- ings.	ploy.	Total.	Aver-	Total.	Aver.	sary em- ployés.	earnings per em- ployé.
Laborer and timberman Mine boss	313 313 313	\$1. 19 2. 30 1. 34	1 1	16 286 286	16 286 286	\$19 660 385	\$19 660 385	0. 03 0. 91 0. 91	\$372 722 421
Miners	313 313 313	1. 564 1. 844 2. 024	9	2, 503 1, 135 506	114 126 169	3, 913 2, 092 1, 024	178 232 341	8. 00 3. 63 1. 62	489 577 633
Total	313	1.60}	31	4, 144	122	7, 029	207	13. 25	531
Teamsters	313 313 313 313	1.00 1.40 .50 1.16	1 1	463 236 63 286	116 128 68 286	463 353 34 332	116 177 34 332	1. 48 0. 82 0. 22 0. 91	313 432 157 363
The establishment		1. 38	110	11, 088	101	a 14, 749	134	35.42	416

ESTABLISHMENT No. 56.

Carpenters	818 813	\$1.00 1.25	1		66 223	\$66 279	\$65 279	0. 21 0. 71	\$313 392
	313	1. 191	3	280	145	345	178	0.92	374
Driver	313	. 50	1	15	15	8	8	0. 05	167
Engineers	265 365	1. 05 1. 20	1	365 365	365 365	383 438	383 438	1.00 1.00	383 438
Total	365	1. 124	2	730	365	821	411	2.00	411
ForemenLenders Lender and miner Mine boss	313 313 313 365	1. 50 1. 071 1. 061 2. 63	2 3 1 1	306 80 214 365	153 27 214 365	459 86 228 960	230 29 228 900	0.96 0.26 0.68 1.00	470 336 323 960
Miners	313 313 313	1. 10 1. 25 1. 35	14 1	8 1, 524 139	8 109 139	1, 896 188	135 188	0. 03 4. 87 0. 44	353 389 423
Total	313	1, 251	16	1, 671	104	2, 093	131	5.34	392
Slate picker Timberman	313 313	. 67½ 1. 25	1	96 175	96 175	64 217	64 217	0. 31 0. 5 6	209 388
Truckmen	313 313	1. 10 1. 15	8 2	109 110	14 55	120 127	15 64	9. 35 0. 35	345 961
Total	318	1.13	10	218	23	247	25	0.70	253
Washermen	313 313	1. 00 1. 10	1	267 151	267 151	267 160	267 1 60	0. 85 0. 48	313 332
Total	313	1.02	2	418	209	427	214	1.23	320
The establishment		1.30	42	4, 578	109	b 5, 955	143	14. 13	421

e The earnings here shown are for one year. The statements for this establishment on pages 252 and 565 are for nine months only.

In addition \$433 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 253 and 595.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. X.—Iron Ore: UNITED STATES—Continued.

ESTABLISHMENT No. 46.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for perio	od.	works	ition if men had inuous yment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- és.	Total	Average.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.
Bankmen	313 313	\$1.30½ 1.79	40 3	6, 040 870	151 290	\$7, 882 1, 558	\$197 519	19, 30 2, 78	\$408 561
Brakemen Carpenters Drill sharpeners Drillers: Drillers' helpers Engineers and machinists Firemen Foremen, miners Loaders Masons and painters Matchman	313 313 313 313 313 313 313 313	1.30 2.03 1.68 1.65 1.40 2.60 1.55 2.12 1.21 2.54 1.40 1.55	5 4 18 14 4 4 5 22 9 135	1,060 864 858 2,253 2,274 1,132 1,105 1,154 4,745 809 25,386 359	212 216 215 125 162 283 276 231 216 90 188 359	1, 378 1, 752 1, 441 3, 734 3, 183 2, 943 1, 712 2, 455 5, 761 2, 035 35, 608 556	276 438 360 207 227 736 428 491 262 228 264 656	3. 39 2. 76 2. 74 7. 20 7. 27 3. 62 3. 53 3. 69 15. 16 2. 58 81. 10 0. 98	407 635 526 519 438 814 485 666 380 795 439 565
The establishment		1.47	268	48, 909	182	a 72, 018	269	156, 10	461
Mackemith	3:2	\$1.70	,	271	271	9461	2461	0.27	9534
Blacksmith	313 313	\$1.70 1.35	1 3	271 578	271 193	\$461 780	\$461 260	0. 87 1. 85	\$532 422
DriversLaborers	313 313 313	1.35 .96 1.00	2 29	578 271 1, 841	193 186 66	780 254 1, 823	260 127 63	1. 85 0. 87 5. 88	422 293 310
Drivers	313	1.35	3 2	578 271	193 186	780 254	260 127	1. 85 0. 87	293 810 308
DriversLaborers	313 313 313 813 813 313 313 313 313	1.35 .96 1.00 .961 1.721 1.431 1.61 1.37 2.09	3 2 29 31 1 16 6 3 2	271 1, 841 2, 112	193 136 66 68 313 115 66 8 67	780 254 1, 823 2, 077	260 127 63 67 510 165 106 14 140	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 07 0. 43	293 810 308 540 449 504 585
Laborers Total Mine boss	313 313 313 813 813 313 313 313	1.35 .96 1.00 .961 1.721 1.431 1.61 1.37	3 2 29 31 1 16 6 3	578 271 1,841 2,112 313 1,840 396 23	193 136 66 68 313 115 66 8	780 254 1, 823 2, 077 540 2, 638 638 43	260 127 63 67 510 165 106 14	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 07	293 810 308 540 449 504 585 654 939
Drivers Laborers Total Mine boss Miners	313 313 313 313 313 313 313 313 313	1. 35 . 96 1. 00 . 961 1. 721 1. 431 1. 61 1. 37 2. 09 8. 00	3 2 29 31 1 16 6 3 2 1	578 271 1,841 2,112 313 1,840 396 23 134 2	193 136 66 68 313 115 66 8 67 2	780 254 1, 823 2, 077 540 2, 638 43 280 6	260 127 65 67 540 165 106 14 140 6	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 07 0. 43 0. 01	422 293 310 308 540 449 504 585 654 939
Total Miners Total Total	313 313 313 313 313 313 313 313 313 313	1. 35 .96 1. 00 .96½ 1. 72½ 1. 43½ 1. 61 1. 37 2. 09 3. 00	3 2 29 31 1 16 6 3 2 1 28	578 271 1, 841 2, 112 313 1, 840 396 2134 2 2, 395	193 136 66 68 313 115 66 8 67 2	780 254 1, 823 2, 077 540 2, 638 43 280 6	280 127 65 67 540 165 106 14 140 6	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 07 0. 43 0. 01	293 810 308 540 540 504 585 654 939 471 214
Total Mine boss Total Water boy	313 313 313 313 313 313 313 313 313 313	1.35 .96 1.30 .96½ 1.72½ 1.43½ 1.61 1.37 2.09 8.00 1.50½	2 29 31 1 16 6 3 2 1 28 1	578 271 1, 841 2, 112 313 1, 840 23 134 2 2, 395 136 5, 805	193 136 66 68 313 115 66 8 67 2 86 126	780 254 1, 823 2, 077 540 2, 638 638 43 280 6	280 127 65 67 540 165 106 14 140 6	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 01 7. 66	293 810 308 540 449 504 585 654 939
Total Mine boss Total Water boy	313 313 313 313 313 313 313 313 313 313	1.35 .96 1.00 .98½ 1.72½ 1.43¾ 1.61 1.87 2.09 3.00 1.50½ .75	2 29 31 1 16 6 3 2 1 28 1	578 271 1, 841 2, 112 313 1, 840 23 134 2 2, 395 136 5, 805	193 136 66 68 313 115 66 8 67 2 86 126	780 254 1, 823 2, 077 540 2, 638 638 43 280 6	260 127 65 67 540 165 106 14 140 6 129 93	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 01 7. 66	422 283 310 308 540 449 504 585 634 939 471 214 407
Total Miners Total Miners Total Water boy The establishment Blacksmith Driver	313 313 313 313 313 313 313 313 313 313	1.35 .96 1.00 .98½ 1.72½ 1.43½ 1.61 1.209 8.00 1.50½ .75 1.30	3 2 29 31 1 16 6 3 2 1 28 1 65	578 271 1,841 2,112 313 1,840 396 23 134 2 2,395 136 5,805	193 186 66 68 313 115 66 8 67 2 86 126 89	780 254 1, 823 2, 077 540 2, 638 433 280 6 3, 605 98 b 7, 556	260 127 65 67 540 165 106 14 140 6 129 93 116	1. 85 0. 87 5. 88 6. 75 1. 00 5. 88 1. 27 0. 07 6. 43 0. 01 7. 66 0. 43 18. 56	422 293

s Includes \$4,227 expended for permanent improvements, which could not be eliminated from the different occupations given above.

b The earnings here shown are for one mine only. The statement for this establishment on page 233 is for two mines.

TABLE AII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. X.—Iron Ore: UNITED STATES—Continued.

ESTABLISHMENT No. 61—Concluded.

•	Work-	Actual daily earn-inge, or daily	4	.ctual co	aditio	a for peri	od.	works	ition if nen had inuous yment
Occupation.	days in the period.	rate nearest to average	Dif-	Days work	of lone.	Earni	nge.	Neces-	Conse- quent
		daily carn- ings.	ploy- 6e.	Total.	Aver- ago.	Total.	Aver- age.	em- ployés.	earnings por em- ployé.
Washerman	155	\$1.10	1	121	121	\$133	\$133	0.78	\$170
The establishment	•••••	1.15	45	2,746	61	a 3, 152	70	17.71	170
	1	STABL	SHMO	ENT No	. 64.				
Engineers	155	\$1.15	2	304	153	\$358	\$177	1.96	\$180
Mine bosses	155 181	1.15 1.31	1 1	155 181	155 181	180 240	180 240	1.00 1.00	180 210
Total	168	1.25	2	236	168	420	219	2.00	210
Miners	155 155 155 155	.60 .80 .90 1.00	82 4 5	283 2, 051 463 395	71 64 116 79	178 1, 649 415 395	48 52 104 79	1. 83 18. 23 2. 99 2. 55	95 125 136 15
Total	155	. 824	45	3, 191	71	2, 632	58	20. 59	12
Miner and ore cleaner	155	. 67	1	85	85	57	57	0.55	104
Ore cleaners	155 155 155	. 30 . 40 . 50	1 2 1	39 60 14	39 30 14	12 24 7	12 12 7	0, 23 0, 39 0, 09	44 6: 71
	155	. 60	1	120	28	46	18	0.50	91
Total The establishment	155	. 47	55	4 106	75	b 3, 551	65	1. 23 26. 13	129
	E	STABLI				•		1	1
Bankmea	313 313 313	\$1. 25 1. 35 1. 75	1 1 2	68 256 189	66 256 95	963 945 331	\$63 845 166	0. 21 9. 82 0. 60	\$30 42 54
Total	313	1. 484	4	511	128	759	190	1.68	400
Blacksmith Brakemen Bricklayers Carpenters Engineer Firemen Fireman and pumpman Foreman, track Mine bose	313 313 313 313 313 313 313 313	1.56 1.35 8.00 1.25 2.30 1.56 1.39 1.25 2.30	1 2 5 2 1 2 1 1	234 534 89 178 213 525 158 61	284 267 18 89 313 263 158 61 813	263 721 266 222 720 831 220 76 720	365 361 53 111 720 416 220 76 720	0. 75 1. 71 0. 28 0. 57 1. 00 1. 68 0. 50 0. 50	481 422 933 396 720 493 431 830 720
M. aers	313 313 313 313 313	.67 .75 .90 1.00	1 5 17 117	53 85 809 8, 198 1, 933	53 17 48 70 342	36 65 731 8, 189 2, 146	36 13 43 70 266	9. 17 9. 27 2. 58 26. 19 6. 18	21: 23: 28: 31: 34:

s In addition \$46 was paid to outside persons for labor done under contract, which is included in the statements for this establi-hment on pages 252 and 596.

5 In addition \$102 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 253 and 596.

H. Ex. 265-30

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. X.—Iron Ore: United States—Continued.

ESTABLISHMENT No. 59.

	Work-	Actual daily earn- ings, or daily	A	ctual co	ndition	for peri	od.	works	ition if nen had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif.	Day work	of done.	Earni	ngs.	Noces	Coase- quent
		daily earn- ings.	ploy- és.	Total.	Aver-	Total.	Aver- ago.	em- ployés.	earnings per em- ployé.
Blacksmiths	313 313	\$1. 20 1. 124	2	219 113	125 113	\$298 127	\$149 127	0. 80 0. 36	\$375 352
Engineers	313 313	1.00 1.25	3	738 27	216 27	735 34	245 34	2, 36 0, 09	312 394
Total	· 313	1.001	4	765	191	769	193	2.45	315
Foremen	313 313	1.40 1.50	2 1	420 24	210 24	588 36	294 36	1.34 0.08	438 470
Total	313	1.40}	3	444	148	624	208	1. 42	440
Foreman and miner	313 313	1.33	1 2	259 451	259 226	345 406	345 203	0. 83 1. 44	417 282
Loaders	313 313 313 313 313	.60 .65 .80 .90	1 1 1 2 2	7 278 100 43 567	7 278 100 22 284	190 81 39 542	190 81 20 271	0. 02 0. 89 0. 32 0. 14 1. 81	179 214 254 284 299
Total	313	. 86	7	995	142	856	122	3. 18	269
Minors	313 313 313 -313 313	1.00 1.05 1.10 1.25	1 2 3 6 10	105 137 296 306 937	105 69 99 51 94	94 139 311 337 1, 171	94 70 104 56 117	0. 34 0. 44 0. 95 0. 98 2. 99	280 318 329 345 391
Total	313	1.15	22	1,781	81	2, 052	93	5. 70	361
Timbermen	313	1.05	1	252	252	264	264	0.81	328
Truckmen	313 313 313 313	. 90 . 95 1. 00 1. 10	13 5 3 1	1, 517 560 364 11	117 112 121 11	1, 371 544 364 12	105 109 121 12	4. 85 1. 79 1. 16 0. 04	283 304 313 341
Total	313	. 934	22	2,452	111	2,291	194	7.84	292
The establishment		1.031	65	7,761	119	a 8, 032	124	24. 83	324
	E	STABL	ISHM	ENT No	o. 61.				
Carpenters. Drivers Engineers Foreman Laborer Landers Miners Timberman	155 155 155 155 155 155 155 155	\$1.25 .50 1.25 1.50 1.00 1.00 1.25 1.25	2 4 2 1 1 2 9	144 83 270 154 2 109 326 108	72 21 135 154 2 55 36 108	\$182 41 334 231 2 110 407 135	\$91 10 167 231 2 55 45 135	0. 93 0. 54 1. 74 6. 99 0. 01 0. 70 2. 10 0. 70	\$196 77 192 233 155 156 194
Truckmen	155 155 155 155	1.00 1.05 1.10 1.15	3 2 13 4	124 189 710 406	41 95 55 102	125 200 783 469	42 100 60 117	0, 80 1, 22 4, 58 2, 62	156 164 171 179
Total	155		_		65	1, 577	72	9, 22	

s In addition \$1,137 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 252 and 595.

PART II.—TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND BARNINGS—Continued. X.—Iron Ore: UNITED STATES—Continued.

ESTABLISHMENT No. 72-Continued.

	Work-	Actual daily earn- ings, or daily	4	ctual co	ndition	for perio	od.	works	ition if men had innous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earn	ings.	Neces-	Conse- quent
		daily earn- ings.	em- ploy- éa.	Total	Aver-	Total.	Aver-	em- ployés.	earnings per em- ployé.
Engineers	313 313 313 313 513	\$1.50 1.60 1.90 2.00 2.50	1 3 1 1	24 35 731 285 290	24 35 244 285 290	\$36 56 1,360 570 725	\$36 56 453 570 725	0, 08 0, 11 2, 34 0, 91 0, 93	\$470 501 582 626 783
Total	313	2.01	7	1, 365	195	2, 747	392	4.37	630
Engineer and laborer	313	1.77	1	200	200	354	354	0.64	554
Fillers	313 313 313 313 313 313 313	1.55 1.62± 1.75 1.85 1.90 1.95 2.00	2 9 2 3 5	21 53 283 58 276 556 150	11 27 32 29 92 111 75	33 86 492 108 527 1,088 298	17 43 55 54 176 218 149	0.07 0.17 0.91 0.19 0.88 1.78 0.48	493 506 540 583 596 612 623
Total	313	1.88	25	1, 399	56	2, 632	105	£ 48	589
Firemen	313 313 313 313 313	1.50 1.60 1.75 2.00 2.14	1 4 2 3 1	252 400 312 747 99	252 100 156 249 99	381 639 546 1, 489 212	381 160 273 496 212	0. 81 1. 28 1. 00 2. 39 0. 32	473 500 548 624 670
Total	313	1.80	11	1,810	165	3, 267	297	5. 80	565
Fireman and lander Foreman, carpenters	313 313	1. 87 2. 50	1 1	156 311	156 311	292 777	292 777	0. 50 0, 99	586 782
Laborers	313 313 313 313 313 313 313 313 313 313	1.00 1.25 1.45 1.50 1.60 1.66 1.75 1.80 1.85 1.90 1.95 2.00	1 2 3 115 10 16 15 7 11	13 320 79 2, 738 989 995 919 375 698 428 446 157	13 160 26 24 99 62 61 54 63 107 74 39	13 424 115 4, 122 1, 575 1, 653 1, 610 678 1, 287 817 866 320	13 212 38 36 158 103 107 97 117 204 144 80	0. 04 1. 02 0. 25 8. 75 3. 16 3. 18 2. 94 1. 20 2. 23 1. 37 1. 42 0. 50	313 415 456 477 498 520 548 566 577 597 608 638
Total	313	1. 651	194	8, 157	42	13, 480	69	26.06	517
Laborer and mason	313	2. 53	1	79	79	200	200	0. 25	792
Laborers and miners	313 313	1.76½ 1.97	9	743 99	83 99	I, 311 195	146 195	2, 37 0, 32	552 617
Total	313	1.79	10	842	84	1, 506	151	2. 69	560
Laborers and miners' helpers.	313	1. 63	2	308	154	502	251	0,98	510
Laborers and trammers	313 313	1.72 2.06	1	54 103	103	93 212	93 212	0. 17 0. 33	539 644
Total	313	1.94	2	157	79	305	153	0.50	608
Laborer and watchman	365	1. 691	1	267	207	452	452	0.73	618
Landers	313 313 313 313 313	1.50 1.60 1.75 1.80 1.85	5 3 3 4	737 360 598 910 1, 143	147 120 199 303 286	1, 108 599 1, 028 1, 629 2, 157	222 200 343 543 539	2. 33 1. 15 1. 91 2. 91 3. 65	471 521 538 560 591

X .- Iron Ore: United STATES-Continued.

ESTABLISHMENT No. 69 —Concluded.

	Work-	daily	,	Letual co	ondition	for peri	od.	work	lition ff men had inuous syment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day work	s of done.	Earni	ngs.	Neces-	Conse- quent
	Verior	daily	em- ploy- és.	Total	Average.	Total.	Aver-	em- ployés.	earnings per em- ployé.
Pumpmen	313 313 313 313 313	\$1. 25 1. 56 1. 00 . 50 . 75	4 1 1 5 4	434 24 166 730 222	109 24 166 146 56	\$529 37 173 364 172	\$132 37 173 73 43	1. 39 0. 08 0. 53 2. 33 0. 71	\$382 483 326 156 243
Total	313	.561	9	952	106	536	60	3.04	170
The establishment		1.111	183	15,570	85	17, 322	95	49.74	348

ESTABLISHMENT No. 72.

Blacksmiths	313 313	\$2. 25 2. 50	1	303 257	303 257	\$603 623	969 3 62 3	0. 97 0. 82	\$716 759
Total	313	2. 35	2	560	230	1, 316	658	1.79	736
Blacksmiths' helpers	313	1.75	2	488	244	963	482	1.56	554
Brakemen	313 313 313 313	1.60 1.65 1.75 1.85	7 5 2 1	790 1, 336 98 176	1:3 267 49 176	1, 270 2, 230 169 830	181 446 85 830	2. 52 4. 27 0. 31 0. 56	503 522 540 587
Total	313	1. 06	15	2, 400	160	2, 999	267	7. 68	522
Brakemen and laborers	313	1. 64	2	494	247	8 10	405	1. 58	513
Carpenters	•313 •313	1.80 2.00	1 15	1, 310	49 87	87 2, 618	87 175	0. 16 4. 19	556 62 6
Total	313	1.90	16	1, 359	85	2, 705	169	4.35	623
Carpenter and laborer Carpenter and miner	313 813	1.83 2.05)	1	29 35	29 35	53 72	53 72	0. 09 0. 11	572 644
Drift-cutters and miners	313 313	2. 18 2. 46 <u>1</u>	2 1	358 104	179 104	781 256	391 256	1. 14 0. 33	683 770
Total	313	2. 24}	3	462	154	1,037	346	1.47	703
Drill boys Drill runner Drillers	313 313 313	1. 25 2. 25 3. 50	2 1 1	261 84	131 7 84	\$26 16 202	163 16 202	0. 83 0. 02 0. 27	391 715 1, 088
Drymen	313 313	1. 25 1. 60	1 2	288 480	288 240	360 757	369 379	0. 92 1. 53	36] 494
Total	313	1.45	3	768	256	1, 117	372	2, 45	1. 435
Dumpers	313 313 313 313 313	1. 80 1. 85 1. 90 1. 93 2. 00	1 5 2 4	199 760 338 143 52	199 154 169 36 26	360 1,481 638 278 104	360 286 319 70 52	0. 64 2. 46 1. 08 0. 46 0. 17	566 5×2 501 608 626
Total	313	1.87	14	1, 501	107	2, 811	201	4. 81	586
Dumper and runners' helper Dumping clerks	\$13 \$13	1. 91 2. 16	1 2	58 286	88 143	168 618	168 309	0. 28 0. 91	598 6 78

PART II.—TIME AND EARNINGS.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued.

X .- Iron Ore: UNITED STATES-Concluded.

ESTABLISHMENT No. 72-Concluded.

	Work-	Actual daily carn- ings, or daily	4	.ctual co	ndition	a for peri	od.	Condition if workmen had continuous employment.		
Occupation.	days in the	the nearest		Day:		Earni	ngs.	Neres.	Conse- quent	
		daily earn- inge.	em- ploy- óa.	Total.	Aver- age.	Total.	Aver- age.	em- ployés.	earnings per em- ployé.	
Trackmen	313 313	\$1.90 2.00	2 2	220 111	160 56	\$610 221	\$305 111	1. 03 0. 85	\$597 623	
Total	313	1. 93	4	481	108	831	208	1. 37	603	
Trammers	313 313 313 313 313 313 313	1. 50 1. 75 1. 70 1. 85 1. 90 1. 95 2. 00 2. 05	2 5 3 24 23 18 18	31 188 220 564 1,119 1,004 1,063 24	16 38 73 24 49 56 59 24	47 320 306 1, 048 2, 134 1, 956 2, 125 49	24 64 133 44 93 109 118 49	0. 10 0. 60 0. 70 1. 80 3. 58 3. 21 3. 40 0. 08	475 533 563 582 597 610 626 639	
Total	813	1.011	94	4, 213	45	8, 075	86	13.47	600	
Trimmera	313 313 313 313 313	1.85 1.90 1.95 2.00 2.10	5 8 1 12 4	110 147 43 1, 286 641	22 49 43 107 160	203 279 84 2, 583 1, 342	41 93 84 215 836	0. 35 0. 47 0. 14 4. 11 2. 05	578 594 611 629 653	
Total	313	2. 02	25	2, 227	89	4, 498	180	7.13	631	
Watchman	363	1. 50	1	50	50	75	75	0.14	548	
The establishment	•••••	1. 95	784	71, 286	91	a 188,926	177	227. 65	610	

Y .- Iron Ore: CONTINENT OF EUROPE.

ESTABLISHMENT No. 76.

Miners	318 818	\$0. 81 i 1. 06 i	13 1	3, 828 803	295 303	\$3, 123 \$23	\$240 323	12.26 0.97	\$255 334
Total	313	. 83	14	4, 141	296	8, 446	246	13. 23	260
The cetablishment		. 83	14	4, 141	296	b 3, 446	246	13. 23	260

ESTABLISHMENT No. 77.

ForemanLaborers	313 313	\$0.84 .56	1 5	117 170	117 34	\$28 95	\$98 19	0.37 0.54	\$263 175
Miners	813 313	. 651 1. 02	1 11	26 1, 032	26 94	17 1, 057	17 96		205 321
Total	313	1. 011	12	1, 058	88	1, 074	90	3. 38	318
The cetablishment		. 94	18	1, 845	75	b 1, 267	70	4.29	295

a In addition \$4,275 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 253 and 896.

b The earnings bern shown are for ouly a part of the employés, while the statement for this establishment on page 253 is for the entire number.

TABLE XII.—ACTUAL AND THEORETICAL TIME AND EARNINGS—Continued. X.—Iron Ore: UNITED STATES—Continued.

ESTABLISHMENT No. 72-Continued.

	Work	Actual daily earn- ings, or daily		ctual co	ondition	for peri	od.	works	ition if nen had innous by ment.
Occupation.	days in the period.	rate nearest to average	Dif- ferent	Day	of done.	Earn	inge.	Neces-	Conse- quent average
		daily earn- ings.	ploy- és.	Total.	Aver- age.	Total.	Aver-	em- ployés.	per em- ployé.
Machinist	313	\$3. 35	1	313	313	\$1,050	\$1,050	1.00	\$1,050
Masons	313 313 313 313	3, 00 3, 16} 4, 00 5, 00	1 1 3 1	15 6 60 G	15 6 20 6	45 19 239 30	45 19 80 30	0. 05 0. 02 0. 19 0. 02	939 991 1, 247 1, 565
Total	313	3. 83	6	87	15	333	56	0.28	1, 198
Mine bosses	313 313	2.75 5.25}	1	317 313	317 313	884 1, 645	884 1, 645	1.01 1.00	873 1, 645
Total	313	4. 01	2	630	315	2, 529	1, 265	2.01	1, 256
Mine runner	313	2, 10	1	15	15	32	32	0.05	608
Miners	313 313 313	1.76 1.96 2.13	12 163 44	688 18, 257 5, 609	57 112 130	1, 209 35, 799 12, 145	101 220 276	2. 20 58. 33 18. 21	550 614 667
Total	313	1.991	219	24, 644	113	49, 153	224	78.74	624
Miners and pit bosses Miners and pumpmen Miner and teamster	313 313 313	2. 25½ 1. 59 2. 11½	5 2 1	851 547 53	170 274 53	1, 917 1, 089 112	383 545 112	2.72 1.75 0.17	705 623 661
Miners' helpers	313 313 313 313 313 313 313 313	1. 60 1. 75 1. 80 1. 85 1. 90 1. 93 1. 95 2. 00	1 1 16 5 3 5	10 55 32 695 500 513 882 467	10 55 32 43 100 171 176 234	16 96 58 1, 286 944 989 1, 725 931	16 96 58 80 189 330 345 466	0, 03 0, 18 0, 10 2, 22 1, 60 1, 64 2, 82 1, 49	501 546 567 579 591 603 612 624
Total	313	1. 91	34	3, 154	93	6, 045	178	10.08	600
Pit bosses	313	2, 35	11	2, 474	225	5, 809	528	7.90	735
Pumpmen	313 313 313	1.75 1.90 2.00	1 5 1	298 751 115	298 130 115	499 1, 439 230	499 288 230	0. 95 2. 40 0. 37	524 600 626
Total	313	1. 861	7	1, 164	166	2, 168	310	3, 72	583
Ropemen	313 313	1.75 2.00	1	26 216	26 216	46 423	46 423	0.08	554 613
Total	313	1.94	2	242	121	469	235	0.77	607
Surface boss	313	2.00	1	278	278	557	557	0. 89	627
Teamsters	313 313	1.95 2.50	1 2	312 135	312 68	611 336	611 168	1.00 0.43	613 779
Total	313	2.12	3	447	149	947	316	1. 13	663
Timbermen	313 313 313	2.00 2.10 2.25	20 1 1	925 161 130	46 161 130	1, 852 335 290	93 335 290	2.96 0.51 5.42	627 651 698
Total	313	2.03	22	1, 216	55	2, 477	113	3. 89	638
Timberman, boss	313 313	2.80 2.05	1 2	318 311	318 156	888 639	888 320	1.02	874 643

SUMMARY OF ACTUAL AND THEORETICAL TIME AND EARNINGS.

[In the following table each line will show the total of an occupation in an establishment. In a like occupation the facts for one establishment cannot be compared with those for another (except as to daily rate of pay), unless the periods are of equal length. The establishment numbers relate to the cost of production presentation, Tables I to XI. Where no establishment number is given no statement of cost of production for the establishment was obtained. In referring from this table to those on production by means of these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Y .- From Ore: CONTINENT OF EUROPE-Concluded.

ESTABLISHMENT No. 80.

,	Work-	Actual daily earn-ings, or daily		ctual co	Condition if workmen had continuous employment.				
Occupation.	days in the period.	rate Bearest to Average	Dif-	Day	of dome.	Earni	ngs.	Noces-	Conse- quent
		daily earn- ings.	ploy.	Total.	vior-	Total.	Aver-	blolee em-	earnings per em- ployé.
Firemen	158 158 158	\$0.52 .95 .60	2 2 3	318 300 517	159 150 172	\$171 286 818	\$86 143 104	2, 01 1, 90 3, 27	\$85 151 96
Machinists	158 158	. 741 . 76	2 2	300 300	150 150	223 228	112 114	1.90 1.90	117 120
Total	158	.75	4	600	150	451	113	2. 80	119
Mason and miner	158 158	.75 .71	1 181	147 25, 278	147 140	110 18, 037	110 100	0, 93 159, 99	11 8 113
Ore setters	158 158 158	.38 .524 .60	2 4 2	212 663 366	106 166 183	80 347 220	40 87 110	1.34 4.20 2.32	60 83 95
Total	158	. 52	8	1, 241	155	647	81	7. 86	82
Timlerman	138	.71}	1	156	156	111	111	0. 99	112
The establishment		. 701	202	28, 557	141	a 20, 126	100	180. 75	111

a The earnings here shown are for six months. The statement for this establishment on page 253 is for three months only.

TIME AND EARNINGS BY OCCUPATIONS.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production those numbers, note should be taken of the industry as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual o	condition for		had conti	f workmen nuous em- ment.	Mar	
days in the period.	or daily rate near- est to average	Different employés.	Days of v	vork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num- ber.
	daily earnings.	ешрюуез.	Total.	Average.	Total.	Average.	employés.	ployé.	
313 91 1257 313 313 313 230 313 313 313 313 313 313 313 3	\$1.50 1.275 (a) (2) 1.424 1.1.557 (a) 1.425 1.425 1.425 1.425 1.437 1.1.557 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	1628 (b) 336447146222222222222222222222222222222222	292 323 412 (a) (d) 263 644 571 21 438 100 884 845 108 844 1,766 601 306 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	292 544 (a) (a) 88 215 63 10 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 54 63 141 141 141 141 141 141 141 141 141 14	#438 403 725 165 3,536 3,733 8840 337 166 1,430 167 1,430 167 167 167 167 167 167 167 167 167 167	\$438 677 363 211 (b) 124 295 166 167 168 169 203 700 70 70 70 70 70 70 70 70 70 70 70 70	0.93 3.544 (a) (a) (b) 1.70 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.032 3.0.04 3.0.0	\$470 114 505 (a) (a) 220 431 - 361 221 368 506 601 221 368 451 201 402 150 61 34 452 529 115 454 451 215 402 403 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b Number of employée not given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

(Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentafor the establishment was obtained. In referring from this table to those on production by means of

	nent num- ber.		Occupation.	Industry.	Locality.
68	37	Black	smiths-concluded	Pig iron	Great Britain
69	7	do		Muck bar iron	United States
70	26	do		Muck bar iron	United States United States
72	8			Muck bar iron Finished bar iron	United States
73	9	do		Finished bar iron	United States
74	1	do		Steel ingota	United States
78				Steel ingots	Continent of Europe
76	_			Steel ingots	Continent of Europe
77				Steel ingots	Continent of Europe
78	_		*****************************	Steel blooms	United States
79	_			Steel rails	Continent of Europe
80			*******************************	Mixed fron and steel	United States
81 82				Mixed iron and steel	United States United States
83	70.00	dq		Mixed from and steel	United States
24	-	do		Mixed fron and steel	United States
26				Mixed fron and steel	United States
845	_	da		Mixed fron and steel	United States
87	-			Mixed from and steel	United States
44	_	co.ala	***************************************	Mixed iron and steel	Continent of Europe
89	_			Mixed from and steel Mixed from and steel	Continent of Europe Continent of Europe
91				Mixed iron and steel	Continent of Europe
92				Mixed iron and steel	Great Britain
9.1		du		Mixed fron and steel	Great Britain
94	100			Mixed iron and steel	Great Britain
111	19	- 40		Bituminous coal	United States
5945	20	de		Bituminous coal	United States
41	5945	de		Bituminous coal	United States
1934	107	da		Bituminous coal	United States
log	100	ito		Bituminous coal	United States
101		the		Bituminous coal	United States
103		eler.		Bituminous coal	United States
tire !	100	do		Bituminous coal	United States
104	14#	du	** ************************************	Bituminous coal	Dominion of Canada
Leer	170	da	-0.0 × 0.0000000000	Bituminous coal	Great Britain United States
log j	19	do	Totala label Species	Coke	United States
DOM: 1	27	do	-240 -24 - 2017/2018/11/2019	Coke	United States
1114	1	du		Iron ore	United States
119	12	de		Iron ore	United States
111	41	da		Iron ore	United States
!!:1	11	40		Iron ore	United States
!!:1	43			Iron ore	
111	47	10		Iron ore	United States
114	1 1	1 37		Iron ore	United States
111	- 1	400		Iron ore	United States
110	19	, in		Iron ore	United States
119	17	1.		Iron ore	United States
! .:	• •	je1-, 1-		Mixed from and steel	United States
12.	4:	40		lron ore	United States.
1::1		- 77		Iron ore	United States
1 1		jet , 1.	amitha and laborate	Steel ingots	United States
17:	- 1	4		lron ore	United States
		\$21.1.1.	tal I see too .	Bituminous coal	United States
{7!	74	111-1	amply and truckman	Iron ore	United States
		111.41	amilia helpeta	Pig iron	Northern district, U. S. Northern district, U. S.
	1 17			Pig iron	Northern district, U.S.
111		1.		Pig iron	Northern district, U.S.,
) · · ˈ	1.	.1	••	Pig iron	Northern district, U.S.
١٠١	· [.	•	•	Pig fron	Northern district, U.S.
121		•		Pig iron	Northern district, U.S., Southern district, U.S.,

TIME AND EARNINGS BY OCCUPATIONS-Continued.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings, or daily rate near-est to average		Actual c	ondition fo	Condition if workmen had continuous em- ployment.		Mar-		
ing days in the period.		Different	Days of work done.		Earnings.		Necessary	Consequent average earnings	gin- al num- ber.
	daily earnings.	employés.	Total	Average.	Total	Average.	employée.	per em- ployé.	
78 165	\$0.79} 2.30	4	358 108	90 108	\$284 248	\$71 248	4. 50 0. 70	\$62 356	. 68
313	2.25	1 1	136	136	306	306	0.43	704	70
313	2.06) 1.63	:	223 637	25 159	465 1,010	52 260	0. 70 2. 13	653 488	71 72
813	1 2.35	1 1	68	68	153	158	0. 22	701	73
813 77	2.43	5 1	924	185	2, 250 46	450 46	2, 95 0, 90	762 51	74 75
27	. 914	1 2	47	24	43	46 23	1,74	25	76
78 230	2.781	2 5	150	75 131	93 1, 823	47 365	1. 92 2. 84	48 641	77
78	. 20	2	654 134	67	112	56	1.73	65	79
313 313	1.95	3 5	464 879	155 176	906 2, 625	302 525	1.49 2.81	611 935	80
213	2.54	4	961	245	2,518	630	8.13	H03	81 82
313 168	2.78	1 4	310 375	310 94	1, 120 1, 042	1, 120	0.90	1, 131 467	83 84
155	1 2 66	;	282	71	812	261 203	2. 23 1. 82	446	85 86
313	1.071	2 5	628 853	314 171	1,931	966 484	2.01	962 887	86
313	.51	27	4, 577	170	2,418 2,341	87	2.73 14.62	160	84
92 313	1.19	1 15	92	92 2×8	109	109	1.00	109	88 89 90
79	.53	3	4, 315 290	97	2, 308 266	154 89	13.78 3.66	167 72	91
48	. 781	6	300	52	242	40	6.43	38	92
156 53	1.26 .74	4 6	681 317	170 53	861 235	215 39	4. 35 5. 98	197 39	93
158	2.00	i	158	158	316	316	1.00	316	95
313 313	2.40 1.83	1 1 3	202 511	202 170	485 935	485 312	0.65	752 573	96
313	2.35	1	289	289	650	650	0. 92	704	98 99
313	2.15 2.25	2	511 307	256 307	1, 121	561 694	1. 63 0. 98	687 706	100
313	2.38	2 5	429	215	1,020	510	1.37	744	101
313	2. 184 2. 314	5	661 1,490	132 135	1, 445 3, 302	289 300	2 11 4.76	684	102
313	1.23	4	1.043	261	1, 335	234	1 3.33	401	104
91	1.05		470	78 228	496	83	5.17	96 509	105
313 313	1.99 2.75	1 1	228 201	201	436 532	436 553	0. 73 0. 64	509 860	107
313	2. 25	1	200	200	449	449	0.64	703	108 109
313 313	2.00 2.25	2	157 296	79 296	314 600	157 690	0. 50 0. 95	626 730	110
313	2.63	1	813	313	636	690 636	1.00	636	111
313	1.97	9 2	2,442 404	271 202	4, 810 646	534 823	7. 80 1. 29	617 5 0 0	112
313	2.50	ī	153	153 271 236	376	376	0.49	769	114
313 313	1.70 1.58	1 1 2 1	271	271	461 372	461 373	0. 87 0. 75	532 493	115
313	1.20	2	249	125	298	149	0.80	375	117
313 313	1.56 2.35	1	234 560	234 280	365 1, 316	363 638	0. 75 1. 79	489 736	118 119
313	1.911	2 8 1 1 3 1 1 1	80	10	153	19	0. 26	599	120
313 313	1.96	1	46 264	46 264	91 390	91 390	0. 15 0. 84	619 462	121
313	1.79	3	870	290	1, 558	519	2.78	561	121 123 123
313 313	1.334	1 1	6 2	6 2	8	8 8	0.02	417	124 123
313		i	(a)	(6)	44	44	0.01 (&)	(a)	126
313	(a) 1.124 1.56	1	113	113	127	127	0.36	352	127
313	1.56	3 3 1 2	211 561	53 187	329 863	82 288	0.68 1.79	488 481	128
313	1.30	3	312	104	407	136	1.00	408	130
365 313	1.50 1.50	1 2	291 308	291 154	433 461	433 231	0.80 0.98	543 168	131 132
155	1.60		177	177	296	296	1.14	250	133
31:1 184	1.654	1	1, 168 282	293 71	1, 932 353	481 88	1. 73 1. 58	51 X 230	133 134 135
. 106			. 403		, 40.5	1 00	1.05	230	. 173

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num ber.	Es- tab- lish- ment num- ber.	. Occupation.	Industry.	Locality.
136 137 138	103 109 40	Blacksmiths' helpers—concludeddodo	Pig iron	Southern district, U. S Southern district, U. S Continent of Europe.
139	9	do	Pig irou	Continent of Europe.
141	26	do	Muck bar iron	United States
142	9	do	Finished bar iron	United States
143	1	do	Steel ingota	United States
144	-	do	Steel ingota	Continent of Europe.
145 146		do	Steel ingots	Continent of Europe.
147		do	Steel ingota	United States
148		do	Steel blooms	United States
149	_	do	Steel rails	Continent of Europe.
150 151		do	Mixed fron and steel	United States
152		do	Mixed iron and steel	United States
153	-	do	Mixed iron and steel	United States
154	-	dodo	Mixed from and steel Mixed from and steel	United States
156		do	Mixed iron and steel	United States
157	_	do	Mixed iron and steel	Continent of Europe.
158 159	107	dodo	Mixed iron and steel Bituminous coal	Continent of Europe.
160	107	do	Bituminous coal	United States
161	-	do	Bituminous coal	United States
162	170	do	Bituminous coal	Great Britain United States
163 164	19	dodo	Coke	United States
165	1	do	Coke	United States
166	41	do	Iron ore	United States
167	42	dodo	Iron ore	United States
169	72	do	Iron ore	United States
170	-		Mixed iron and steel	United States
171	_	Blacksmiths' helper and catcher Blacksmiths' helpers and haulers Blacksmiths' helper and oller Blacksmiths' helper and pipe fitter Blacksmiths' helper and stock preparer. Blacksmiths' belper and stock preparer.	Bituminous coal	United States
173		Blacksmiths' helper and otler	Mixed iron and steel	United States
174	26	Blacksmiths' helper and pipe fitter	Bituminous coal	United States Northern district, U. S
175	10	Blacksmiths' helper and stock preparer.	Pig iron	Great Britain
176	36	do	Pig iron	Great Britain
178 179	-	do	Mixed iron and steel .	Great Britain
179	_	do	Mixed iron and steel	Great Britain
180	26	Blasters	Bituminous coal	United States
182		do	Bituminous coal	United States
183	26	Blaster and driller	Bituminous coal	United States
184 185	26	Blasters and head cutters	Bituminous coal	United States
186	26	Blasters and loaders	Bituminous coal	United States
187	17	Bloom hors	Muck har iron	United States
188	-	Bloom tossers	Mixed from and steel Mixed from and steel	United States
189		Ulacomara	Mixed iron and steel	Great Britain
191		da	Mixed iron and steel	Great Britain
192	_	Bloomer and roller	Mixed iron and steel	Great Britain
193		Bloomer and roller	Mixed iron and steel.	Great Britain
194	7	Diomara	Steel ingots	United States
196	-	10	Steel ingots	Continent of Europe.
197	-	do	Steel ingota	Continent of Europe.
198		do	Mixed iron and steel	Great Britain
200	1		Steel ingota	United States
201	1	Blowers, converter Blowers and regulators	Steel ingots	United States
202	7	Blowers and regulators Bogie boys	Mixed iron and steel	Great Britain
203	29	Bogie men		Great Britain

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tien, Tables I to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual o	ondition for	r period.		had conti	f workmen nuous em- ment.	Mar	
ing days in the period.	or daily rate near est to average	Different	Days of w	vork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num- ber.	
	earnings.	daily earnings.	employés	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
365 313 90 75 313 313 313 313 313 313 313 313 313 31	\$1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	311316125244688652292112651112322121111348408312241214326123633323	331 281 688 245 187 217 217 217 218 218 218 218 218 218 218 218 218 218	110 281 688 82 187 36 93 144 67 222 84 94 144 588 220 188 309 261 283 173 32 182 182 275 302 119 244 242 258 (a) 68 213 4 75 167 46 45 129 (a) 62 169 149 149 149 149 149 149 (a) 62 169 149 149 149 149 149 149 149 149 149 14	\$335 281 444 110 264 322 277 1283 1.062 2.298 2.298 2.298 2.298 2.47 1.684 815 816 848 685 40 273 171 1.725 177 1.725	\$112 281 444 437 264 132 215 23 141 142 266 277 383 561 194 208 213 167 388 424 760 213 167 388 424 760 213 167 488 432 291 208 432 209 66 211 104 208 432 209 213 214 215 229 231 249 250 271 271 281 291 291 291 291 291 291 291 29	0.91 0.90 0.714 0.60 0.305	\$309 313 588 442 463 444 469 26 177 38 306 426 426 426 427 138 486 449 459 470 138 486 441 486 441 486 441 486 441 486 486 441 486 486 486 486 486 486 486 486 486 486	133 133 133 144 144 144 144 144 144 144	

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentator the establishment was obtained. In referring from this table to these on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
205		Bogie men—concluded	Mixed iron and steel	Great Britain
205 206 207 208 209	10 42 40	Bogie men's helper Boiler cleaners de	Mixed iron and steel Pig iron Pig iron Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Continent of Europe
210	36	do	Pig iron	Great Britain
212 213 214	87	do	Pig iron	Great Britain
215	42	do	Mired iron and steel Mired iron and steel	Great Britain
217 218 219	10 36 87	Boiler cleaner and water tender Boiler feeders	Pig iron	Northern district, U. S Northern district, U. S Great Britain
220 221 222	7	Boiler scalers. Boiler tenders	Mixed iron and steel Muck bar iron	Great Britain
223 224 225 226		do	Mixed iron and steel Mixed iron and steel Mixed iron and steel Mixed iron and steel	United States United States United States Continent of Europe
226 227 228 229		do Boiler tender and engineer Boiler washer	Mixed iron and steel Mixed iron and steel Coke	Continent of Europe Continent of Europe United States
229 230 231 232	1	Boilermakers	Pig iron Steel ingots Mixed iron and steel	Continent of Europe Northern district, U. S United States United States United States
232 233 234		do	Mixed iron and steel Mixed iron and steel	United States
235	9	do do Boilefmakers' helpers	Mixed iron and steel Coke Pig iron	Great Britain
237 238 239	67	do	Mixed iron and steel Pig iron Mixed iron and steel	Northern district, U. S United States. United States. Northern district, U. S
240 241 242	\equiv	do	Mixed from and steel Mixed from and steel Mixed from and steel	United States
243 214 245	\equiv	Boilermen and gasmen Boilerman and painter Boileramiths	Mixed iron and steel Mixed iron and steel Mixed iron and steel	United States
246	170	do	Mixed iron and steel Mixed iron and steel Bituminous coal	Continent of Europe Great Britain Great Britain
248 249 250 251		Bolt cuttersdo	Mixed iron and steel Mixed iron and steel Mixed iron and steel	United States
252 253 254	- 2	Bolt packers	Steel ingots	United States
255 256		do	Mixed iron and stee!	United States
237 238 259	7	Bottom builders' helpers Bottom builders' helper and grinder	Mixed iron and steel Steel ingots Steel ingots	United States
260 261 263	1	Bottom men	Steel ingots	United States United States United States United States
263 264 265	148 29	Bottom man and stone handler Bottomers Box pile makers	Steel ingots Bituminous coal Finished bar iron	United States Dominion of Canada
266	32 42	Brakemendo	Pig iron	Great Britain
268 269 270	58 93 103	do	Pig iron Pig iron	Southern district, U. S Southern district, U. S Southern district, U. S
271		do	Steel blooms	United States



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition fo	r period.		Condition i	nuous em-	Mar
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num ber.
	daily earnings.	employés.	Total	Average.	Total.	Average.	employés.	per em- ployé.	
156 156 200 201 135 157 157 157 157 157 157 157 157 157 15	\$1.27 1.030 .25 \(\frac{1}{2}\) .25 \(\frac{1}{2}\) .25 \(\frac{1}{2}\) .25 \(\frac{1}{2}\) .25 \(\frac{1}{2}\) .32 \(\frac{1}{2}\) .32 \(\frac{1}{2}\) .32 \(\frac{1}{2}\) .32 \(\frac{1}{2}\) .33 \(\frac{1}{2}\) .33 \(\frac{1}{2}\) .33 \(\frac{1}{2}\) .34 \(\frac{1}{2}\) .35 \(\frac{1}{2}\) .36 \(\frac{1}{2}\) .37 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .38 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .39 \(\frac{1}{2}\) .49 \(\frac{1}{2}\) .50 \(\frac{1}{2}\) .1.50	9114241414241414211211212121212121212121	1, 038 135 103 103 1238 76 220 196 391 135 139 93 159 92 182 236 111 1600 241 174 683 (a) 8 410 410 2 2 239 952 2384 274 272 288 389 959 356 609 1, 128 312 200 1, 128 328 328 328 328 328 328 328 328 328 3	115 135 103 8 76 80 98 98 135 73 31 40 329 91 140 329 91 155 63 176 63 12 174 228 (a) 8 205 29 186 228 (a) 8 177 80 160 178 178 178 189 160 178 178 189 160 178 178 189 180 178 180 180 180 181 181 181 181 181 181 18	\$1,320 140 154 106 129 239 239 1111 73 100 166 126 128 688 688 280 357 1,280 280 391 1,591 1,591 1,591 1,591 1,004 1,	\$147 140 154 7 190 16 600 600 111 733 55 190 44 616 661 61 61 630 320 242 198 228 242 198 228 242 118 228 244 310 228 248 310 228 241 188 228 241 310 228 241 341 341 342 342 342 342 342 342 342 342 342 342	6.66 0.87 0.083 2.130 0.854 2.130 0.115 1.943 0.900 2.100 2.100 2.100 0.177 0.568 0.077 0.568 0.077 0.185 0.077 0.086 0.077 0.	\$198 162 546 546 546 301 23 18 566 566 561 111 168 683 611 271 484 272 271 289 174 474 275 309 170 470 470 470 470 470 470 470 470 470 4	

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentafor the establishment was obtained. In referring from this table to those on production by means of

n- n- e.	tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
73		Brakemen—concluded	Mixed iron and steel	United States
73 74	156	do	Bituminous coal	Continent of Europe
75	41	do	Iron ore	United States
76	46	do	Iron ore	United States
78	69	do	Iron ore	United States
79	72	do	Iron ore	United States
80	103	Brakeman, dinkey Brakeman, incline Brakeman, locomotive	Pig iron Bituminous coal	Southern district, U. S.
81	148	Brakeman locomotive	Pig iron	Deminion of Canada Northern district, U. S.
13	7	do	Steel ingots	United States
84	_	Brakeman and casthouse man	Steel blooms	United States
85	58	Brakeman and casthouse man	Pig iron	Northern district, U. S.
86	58 103	Brakeman and dumper	Pig iron	Northern district, U. S., Southern district, U. S.,
88	58	Brakeman and fireman	Pig iron	Northern district, U.S.
39	103	do	Pig iron	Southern district, U. S.
90	72	do	Iron ore	United States
12	22	Brander	Mixed iron and steel Pig iron	United States
33	32	Bricklayersdo	Pig fron	Northern district U.S.
14	103	do	Pig iron	Northern district, U.S., Southern district, U.S.,
35	109	do	Pig iron	Southern district, U.S.
16	17	do	Pig iron Muck bar iron	Great Britain
18	5	do	Steel ingota	United States
99	_	do	Steel blooms	United States
ю	_	do	Mixed iron and ateel	United States
11	_	do	Mixed iron and steel Mixed iron and steel	United States
2		do	Mixed from and steel	United States
14	170	do	Bituminous coal	Great Britain
15	69	do	Iron ore	United States
6	_	Bricklayers and laborers	Steel blooms	United States
17	17	do	Pig iron	United States
19	5	do	Steel ingota	United States
0	_	do	Mixed iron and steel	United States
1	_	do	Mixed iron and steel	United States
2 3		do	Mixed iron and steel	United States
4	170	do	Biruminous coal	Great Britain
5	_	Buggy-offs Buggymen	Mixed iron and steel	United States
6	7	Buggymen	Muck bar iron	United States
7		do	Mixed fron and steel	United States United States
0		do	Mixed iron and steel	Continent of Europe
0:	_	Barrenan and heatens' beings	Mixed fron and steel	United States
1	7,	Buggyman and puddler	Muck bar iron	United States
12		Bundle carriers Bundle carrier and heaters' helper	Mixed iron and steel	Continent of Europe
14	_	Bandlers	Mixed fron and steel	United States
15	_	do	Mixed iron and steel	United States
6	_	do	Mixed iron and steel	Continent of Europe
8		do	Mixed from and steel	Continent of Europe
9		do	Mixed fron and steel	Great Britain
0	_	Bundler and laborer	Mixed iron and steel	United States
1	- 00	Bundlers and shippers	Mixed iron and steel	United States
12	29 170	Bundlers and stock takers Bye-workmen	Finished bar iron Bitumioous coal	Great Britain
4	9	Cagemen	Pig iron	Northern district U.S.
5	10	do	Pig iron	Northern district, U.S., Northern district, U.S., Northern district, U.S.,
16	32	do	Pig iron	Northern district, U.S
7	103	do	Pig iron	Northern district, U.S.
8	103	do	Pig fron	Southern district, U.S.,
0	114	do	Pig iron	Southern district, U.S

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings, or daily		Actual o	ondition fo	or period.			f workmen nous em- nout.	Mar-
daya in the	rate near-	Different	Days of w	rork done.	Earr	ings.	Necreary	Consequent	gin- al num-
period.	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	per.
813 77	\$1.75 .274	1 5	309 251	309 50	\$559 60	\$559 14	0. 99 3. 26	\$566 21	273 274
313	1.50	1	68 916	63 305	95 1,374	95 458	0. 20 2. 93	21 473 470	275 276
318	1.30	5	1,060	212	1, 378	276	8. 39	407	277
313	1. 35 1. 661	15	584 2,400	267 180	721 2,999	361 267 267	1. 71 7. 66	428 522	278
365 313	1.35	1	200	160 200	267	267	0.55	487	279 280
313	. 76 1. 384	18	2, 745 246	211 246	2, 092 341	161 341	8. 77 0. 67	239 506	281 283
230	1.55	3	17	26	119	40	0.33	355	283
133	1.65 1.63	1	123 168	123 168	202 272	202 272	6. 93 0. 46	217 501	284
365 365 365	1.634	î	846	346 111	566	566	0.05	597	284 285 295 287 288
365 365	1. 28	1 2	111 666	111 222	142 1, 061	142 354	0. 30 1. 83	_ 467 581	287 288
366	1. 25	3 1	4	4	5	5 1	0.01	456	289 290
313 313	1.64 1.75	2	494 802	247 302	810 515	405 515	1. 58 0. 96	513 534	290
212	3.30	10	10	1	38	4	0.04	1, 189	291 293 298
313 365	4. 834	1 18	8 54	3	18 219	13 17	0. 01 0. 14	1, 356 1, 480	294
313	3.14	3	67	34 90	200	100	0.21	934	295
135	1. 26) 2. 94	3 2	297 206	104	875 612	125 306	2, 20 0, 66	170 921	37
132	2. 94 3. 82)	12	17	1	65	5	0.13	921 505	296 297 296 290 200
251 313	2.50 3.40	12	152 182	152 15	882 620	382 52	0. 61 0. 58	631 1, 066	290
313	4.00	1	238 168	85	1, 352 588	338 588	1.08	1, 252	301
168	3, 50 3, 404	7	625	168 89	2, 127	304	1.00 2.00	588 . 1, 065	302
91	3. 40 1. 42 3. 00	1	59	89 59	84 206	74 53	0.65	130	304 305
318 251	1.734	5	89 243	18 123	421	211	0, 28 0, 97	935 435	206
135 313	. 81	3	316	105 203	. 256 572	85 286	2.34	109	307
182	1.41 1.50	2	406	1 1	3/2	2	1. 29 0, 02	441 198	308
313 313	1.50 1.25 1.99	2	590 759	295 95 199	789 1, 500	870 189	1.88	392 623	310 311
168	2. 25	1	190	190	1, 500	428	2.42 1.13	378	812
313 91	1.40 .81	2	335 79	168 79	473	236 64	1.07 0.87	441 74	318 314
313	(4)	5	(a)	(6)	1.458	291	(a)	(4)	215
155 155	1.48	6	250 132	22	358 207	80 25	1. 63 0. 86	223 243	316 317
313	1.871	3	561	187	1, 061	960	1.79	586	318
313 135	. 57 1. 83	1	170	170	96 11	98 11	0. 54 0. 04	180 284	319 320
155	2.16	1	81	31	67	67	0, 20	3 35	32 1
92	.40 .56	24	878 52	87 52	358 29	15 29	9. 54 0. 57	87 51	323
168	(a) 1.72	1	(a)	(a)	223	221	(6)	(4)	324
313	1.72	3	681 1, 827	227 203	1, 173 776	301 86	2.17 6.84	539 133	325 326
313	. 421	10	2, 221	223	826	88	7. 10	116	3:7
79 48	(47	8	(a)	(6)	174 1 60	22 160	4,66 (a)	37 (a)	324
156	1.631	1	112	113	183	183	0.72	253	330
313	1. 25	5 11	1, 256 1, 205	251 110	1, 500 1, 381	314 126	4.01 12.17	391 112	331 332
91	1.01	23	1,221	53	1, 236	54	18,43	92	333
365 365	2. 25 <u>4</u> 1. 63	3	400 231	200 170	564	451 283	1. 19 0. 93	823 607	334 335
365	1.65	1 2	631	316	1, 032	516	1.73	507	335 336
181 365	2, 00 1, 40	23 2 2 2 2 1	852 239	176 239	700 473	35.1 478	1.94 0.93	361 500	337 334
865	1.434	1	316	316	453	453	0.87	523	330 340
365	1.13	j 2	y The di	49	111	50	0.27	413	369

a Paid by the quantity. The daily rate of pay and days of work done connet be given. H. Ex. 265—31

[Rech line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of predaction presents for the cotablishment was obtained. In referring from this table to these on predaction by means of

Mar- gin- al aum- ber.	Es- tab- lish- ment num- bor.	Occupation.	Industry.	Locality.
341	18	Cagemen—concluded	Bituminous coal	United States
342 343 341	156	do	Bituminous coal	United States
341	12	do	Iron ore	United States
345	26	Cageman and driver	Bituminous coal	TT-11-1 Orange
346	101	Cagemen and nuers	Pig iron	Southern district, U.S.
348 349	10 26	Gagemen and laborer	Pig iron Bituminous coal	Southern district, U.S. Southern district, U.S. Northern district, U.S. Northern district, U.S.
349	26	Cagemen and loaders	Bituminous coal	United States Northern district, U.S.
350 351	16	Cagemen's helpers Cagemen's helper and stock preparer.	Pig iron	Northern district, U.S. Northern district, U.S.
352	-	Call boys	Mixed iron and steel	United States
353	7	Callers	Muck bar iron	United States United States
354		dodo	Mixed iron and steel	United States
356	170	Capstan men	Bituminous coal	Great Britain
357 358	13	Car leveller	Iron ore	United States United States
359	1	Carboneers	Steel ingots	United States
360	_	do	Steel billets	United States
361	10	Carpentersdo	Pig iron	Northern district, U.S. Northern district, U.S.
363	32	do	Pig iron	Northern district, U.S.,
364	32 41 42	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S Northern district, U.S
366	49	do	Pig iron	Northern district, U. S.
367	55	do	Pig iron	
368	58 67	do	Pig iron	Northern district, U. S.
270	83	do	Pig iron	Northern district, U.S., Northern district, U.S., Northern district, U.S.,
371	84	do	Pig iron	Northern district, U. S.,
372 373	101	do	Pig iron	Southern district, U. S., Southern district, U. S.,
374	109	do	Pig iron	Southern district, U. S
375 376	36	dodo	Pig iron	Great Britain
377	37	do	Pig iron	Great Britain
378	_	do	Steel ingota	Continent of Europe United States
379 380		do	Steel blooms	United States
381	-	do	Steel blooms	United States
382		do	Mixed iron and steel Mixed iron and steel	United States
384	-	do	Mixed iron and steel	United States
385 386		do	Mixed iron and steel Mixed iron and steel	United States
387		do	Mixed iron and steel	United States
388		do	Mixed iron and steel Mixed iron and steel	United States
390		do	Mixed iron and steel	Continent of Europe Continent of Europe
391	-	do	Mixed iron and steel	Continent of Europe
392	=	do	Mixed from and steel	Continent of Europe
394	_	do	Mixed iron and steel	Great Britain
395	10	do	Mixed fron and steel Bituminous coal	Great Britain United States
396	18	do	Bituminous coal	United States
308	96	do	Bituminous coal	United States
399	107	do	Bituminous coal	United States
401	100	do	Bituminous coal	United States
402		do	Bituminous coal	United States
403 404		dodo	Bituminous coal	United States
405		do	Bituminous coal	United States Dominion of Canada
406 407	170	do do	Bituminous coal	Great Britain
408	1 13	do	Coke	United StatesUnited StatesUnited States
400	iš	do	Coke	United States

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition fo	r period.		had conti	f workmen nuous em- nient.	Mar
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	-
158 313 77 7133 313 313 313 314 365 313 315 315 313 313 313 313 313 313 31	\$1. 72 \$1. 924 \$1. 924 \$1. 925 \$1. 926 \$1. 1. 208 \$1. 1. 208 \$1. 1. 208 \$1. 1. 208 \$1. 2. 2. 2. 3. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	8568210611281212229213111115111112481119513661715241111142155774111	312 318 319 202 558 581 70 259 450 333 276 62 179 209 155 259 268 1, 375 259 268 1, 375 259 314 142 496 314 142 496 314 177 28 420 199 199 100 100 100 100 100 10	104 64 49 279 163 270 70 250 145 150 333 276 7 362 179 70 182 142 143 153 144 143 288 289 20 97 851 326 47 77 107 14 105 33 84 41 100 374 91 105 116 303 146 92 234 91 60 60 149 152 61 66 67 77 290 292 75 203 84 77 77 77 77 77 77 77 77 77 77 77 77 77	\$537 610 1877 936 396 599 599 526 380 178 227 429 41 590 626 2,440 677 284 1,158 40 1,205 527 658 68 40 1,205 527 658 68 1,101	\$179 122 31 468 314 468 314 386 91 396 275 224 525 380 10 570 269 227 211 295 313 271 281 463 860 224 373 479 463 823 479 461 83 224 1, 013 277 677 677 677 677 677 677 677 677 677	1.9728 1.0783 1.0783 1.0198 1.	\$272 600 525 603 211 475 578 595 546 577 431 493 203 278 390 449 856 631 555 548 631 501 501 501 602 602 602 602 603 603 604 603 604 603 604 604 605 605 606 606 606 606 606 606 606 606	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

s Paid by the quantity. The daily rate of pay and days of work done carnot be given.

(Rach line shows the total of an occupation is an establishment. In a like occupation the facts for the special gas of equal length. The establishment numbers related a the cost of prediction presentables actabilishment was obtained. In referring from this table to those on prediction by means of

gla- gla- gla- gla- gla- gla- gla- gla-	tale ment posse ber.	Goçopation.	Industry.	Locality.
410		Carpenters—concluded	Coke	Continent of Europe
711	1		Iron ore	United States
413	12	do	Iron ore	United States
419	41	da	Iron ore	United States
414	42		Iron ore	United States
416	44	10	Iron ore	United States
417	44		Iron ore	United States
410	46 56		Iron ore	United States
410	61	do	Iron ore	United States
420	60		Iron ore	United States
493	72	do	Iron ore	United States
499	26	Carponter and dumper	Bituminous coal	United States
124	#	Carpenter and engineer	Pig iron	United States Northern district, U.S.
120	**		Bituminous coal	United States
497	73	Carpenters and millwrights	Iron ore	United States
498		Carpenters and millwrights	Muck bar iron	United States
420	. 0	Carpenters and miners	Finished bar iron Bituminous coal	United States
431	72	do	Iron ore	United States
483	100	Carpenter and reckman	Bituminous coal	United States
488	100	Carpenters' helpers	Mixed iron and steel	United States
434	107	Carriera	Steel rails	United States
436		Cartmen	Mixed iron and steel .	United States
437	13		Coke	United States
438	13	Castmon and drawers	Coke	United States
440	0.00	Cartmen's helper	Mixed iron and steel . Pig iron	United States
441	5.6	Casthouse man and cinder snapper	Pig tron	Northern district, U. S. Northern district, U. S.
444	-	Casting varriers	Steel ingots	Continent of Europe
443	7	Casting drossor	Much bat iron.	United States
443	- 1	. 10	Muck bar tron	United States
444	17	da	Muck but tron	United States
447	24		Muck bar iron	United States
444	*	do	Figure ber from	United States
430		W	Steel 73 's	Can rent of Europe
4.11		do	Sec. 18.4	Continent of Europe
434			Mile ton and steel	71. u States
474		de .	Mixed true and steel	Terral States
44	_	do man conscientamentomento.	Mixed the and steel.	TY ON SCHOOL
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*110		Section and business as	The series with the series	The Name of Street
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one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition for	period.			f workmen nuous em- nent.	Ma
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	al nun ber
	daily earnings.	employés.	Total.	Average.	Total	Average.	employés.	per em- ployé.	-
365 313	\$0.83	2 3 4 1 4 1	6 196	+ 85	\$5 396	\$3 132	0. 02 0. 63	\$304 632	4
313	2, 02 2, 18	3	500	125	1, 091	273	1.60	683	4
313	2.00	i	47	47	93	93	0, 15	619	1
313	1. 534	4	996	249	1, 530	383	3.18	481	
313	1.50	1	172	172	257	257	0. 55	468	1
217	1.35	1	177	177	239	2:19	0.82	293	4
313	2.00	1	292	292	583	183	0.93	625	- 4
313	2.03	4 2	289	216	1, 752	4:18	2. 76	635	1 3
313 155	1. 101	2	144	145 72	345 182	173	0. 92	374 196	1
313	1. 25	2	178	89	222	111	0. 57	390	1
313	1.99	16	1, 350	85	2, 705	160	4.35	623	1
313	1.571	1	193	193	304	301	0. 62	493	4
313	1.60	1	65	65	104	104	0. 21	501	1
143	1.35	î	145	145	196	196	1.01	103	1
313	1. 321	1	37 29	37	49 53	49 53	0.12	415	1 4
313	1.88	1	79	79	149	149	0.25	572 500	1
313	1. 884	1 1	79	79	140	149	0.25	590	
313	1. 745	3	121	40	211	70	0.20	546	1
313	2.054	1	35	35	72	72	0.11	644	1
313	2.11	1	. 0	9	19	19	0.03	661	1
313	1. 25	1	128	128	160	160	0.41	391	
313 78	1.50	18	1, 190	55 66	589	82 33	0. 18 15. 26	467 39	1 3
313	1. 35	1 2	387	194	525	263	1. 24	425	13
313	1.364	2 7	680	97	927	132	2.17	427	1 3
313	1. 45	2	201	101	292	146	0.64	455	
313	1.12	1	300	200	338	338	0.96	353	1
365 365	1.50	23	4, 677	203 336	7, 005	305 529	12.81	547	1 3
78	. 47	3	166	55	520	26	0.92 2.13	575 37	1
53	.61	i	55	55	34	34	1.04	33	
143	2. 181	4	267	67	583	146	1.86	312	1 3
286	2.54	2	446	223	1, 135	568	1.56	728	1 4
286	2.74	4	595	149	1, 634	409	2.08	785	1 3
286	2. 50 3. 841	1 4 2 4 2 2 2 2 2	402 286	201 143	1,005	503 530	1.41 0.96	1,149	1.4
280	2. 25	2	446	223	1,004	502	1.56	644	1
77	.414	ī	72	72	30	30	0.94	32	1
78	1.71	2	144	72	246	123	1.85	133	1
313	(a)	18	(a)	(a)	2, 700	150	(a)	(a)	1 1
286 286	(a) (a)	13	(a) (a)	(a) (a)	3, 544	709 288	(a) (a)	(a)	13
313	3. 7%	13	1,570	121	5, 942	457	5.01	(a) 1, 185	13
287	4, 95	2	412	206	2, 039	1,020	1.43	1, 420	
168	(a)	2	(a)	(a)	205	453	(a)	(a)	
155	1.771	7	110	16	195	28	0.71	275	4
313	(a) 1, 793	9 8	(a)	(a)	4, 102	456	(a)	(a)	1.0
313	. 93	15	1, 267 3, 636	158 242	2, 273 3, 399	284 227	4. 05 11. 61	562 293	1
92	634	16	1, 028	64	654	41	11.18	50	1 4
313	. 845	12	3, 310	276	2, 800	233	10, 58	265	1 9
156	1.50	6	714	119	1,075	179	4.58	235	1
313	1. 48	1	161	161	239	239	0.51	465	
313	1.36± 2.00	1 2	80	80	109	109	0.26	426	1 4
155 313	1. 364	2	76 206	206	152 281	76 281	0.49	310	1
286	(a)	1 1	(a)	(4)	164	164	(a)	(427	1
313	1.41	1 1 1 2	205	205	289	289	0. 65	441	1
313	1.48		50	25	74	37	0, 16	463	1
155	1.74		115	29	200	50	0.75	270	4
313	1.46	2 1	463	202	588	294	1. 29	457	4
313	(a) (a)	1 1	(a)	(a)	240 470	240 118	(a)	(4)	1
313	11. U54	4 2	388	(a) 194	1, 186	593	1. 24 2. 28	(a) 957	
313	2.21	1 4	711	178	1,571	393	4	602	

e Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentator the establishment was obtained. In referring from this table to those on production by means of

gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
478		Catchers and shearmen	Mixed iron and steel Mixed iron and steel	United States
479 480	_	Catcher and sticker-in	Mixed fron and steel Mixed fron and steel	United States
481		do	Mixed iron and steel	United States
482 483	_	Catchers' helpersdo	Steel rails	Continent of Europe
484		do	Mixed iron and steel	United StatesUnited States
485		do	Mixed iron and steel	Great Britain Continent of Europe
487	40	Chargersdo	Pig iron	Great Britain
487 488	29	do	Pig iron Finished bar iron	United States
489	1	do	Steel ingots	Continent of Europe
491	_	do	Steel billets	United States
492	=	do	Steel blooms	United States
494	_	do	Mixed iron and steel	United States
495		do	Mixed iron and steel	United States
497	_	do	Mixed iron and steel.,	United States
498		do	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe
500	_	do	Mixed fron and steel	Great Britain
501 502	6	do	Mixed iron and steel	United States
503	13	do	Coke	United States
504 503	19 23	do	Coke	United States
506	28	do	Coke	United States
507	29	do	Coke	United States Continent of Europe
509	_	Charger and chipper Charger and doorman	Steel billets	United States
510 511		Charger and doorman	Steel blooms	United States
512	23	Charger and furnace helper	Coke	United States
513		Charger and furnace helper	Steel billets	United States United States
515	_	Chargers and heaters	Mixed iron and steel	United States
516		Chargers and heaters' helpers	Mixed iron and steel Steel billets	Continent of Europe United States
518	_	do	Mixed iron and steel	United States United States
519		Charger and hooker	Mixed iron and steel Steel billets	Continent of Europe United States
521	-	Chargers and laborers	Steel billets	United States
522		Charger and loader	Mixed iron and steel Steel blooms	United States United States
524 525	-	Chargers and pilers	Mixed iron and steel	United States
526	7	Charger and pushers' helper	Steel blooms	United States United States
527 528	-	Chargers and sweepers	Steel billets	United States
529		Chargers and tongsmen Charger and transmitter	Steel billets	United States
530	13	Charger and watchman	Coke	United States
531		Chargers' helpersdo	Pig iron Steel blooms	United States
533	-	Checker	Mixed iron and steel	Great Britain
534	1	Chemist, assistant	Mixed iron and steel	United States Continent of Europe
536	-	Chillmen	Mixed iron and steel	Great Britain
537		Chippersdo	Steel ingots	United States
\$39	-	do do de la companya	Mixed iron and steel	Great Britain
540 541		Chippers and pilers. Chipper and masons' helper	Mixed iron and steel Steel billets	Great Britain United States
542	_	Cinder boys	Mixed from and steel	United States
543	=	Cinder loadersdo	Mixed iron and steel Mixed iron and steel	Continent of Europe
544	9	Cinder snappers	Pig iron	Northern district, U.S.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings, or daily		Actual	condition for	r period.		Condition i had contin ploys	mous em-	Mar
ing days in the period.	est to average	Different	Days of	vork done.	Earn	ilngs.	Necessary	Consequent average earnings	gin- al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
286 286 286 286 286 286 286 286 286 286	(a) (a) (2.20 1.619 1.71 1.69 1.72 1.20 1.619 1.72 1.20 1.619 1.72 1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.2	41111223485191821448145441224611321112412112211231414279315312	(a) (c) 241 72 611 72 611 72 611 72 611 72 611 72 611 72 611 72 611 72 612 72 612 72 72 72 72 72 72 72 72 72 72 72 72 72	(a) (a) 241 72 61 206 (a) 121 206 (a) 123 135 125 88 127 144 289 323 11 11 24 289 144 (a) 66 167 267 166 167 267 167 267 173 190 61 173 27 78 71 191 233 32 111 105 223 33 124 120 293 141 522 (a) 47 49 (a) 66 169 67 207 207 207 207 207 207 207 207 207 20	\$3, 344 309 529 116 91 1, 310 6 666 1, 367 375 308 8352 2, 811 4, 334 4, 394 207 2, 223 188 99 900 244 4, 31 202 4, 471 885 5 8 783 187 88 783 187 88 341 188 341 188 341 188 341 188 341 188 341 188 341 188 341 341 341 341 341 341 341 341 341 341	\$836 309 529 116 91 657 50 135 54 171 75 308 55 542 207 555 542 207 117 114 1122 113 400 301 117 128 216 148 228 249 249 148 25 66 168 783 36 178 783 36 188 783 36 40 311 249 36 36 36 36 36 37 37 38 40 30 30 30 30 30 30 30 30 30 3	(a) (b) 777 (c) 143 (d) 2.3.99 (e) 1.2.153 (e) 2.2.53 (e) 2.2.153	(a) (b) \$687 250 116 64 171 64 171 64 171 65 67 288 68 68 728 868 68 728 868 68 728 868 68 728 868 728 868 728 868 728 728 728 728 728 728 728 728 728 72	474 444 444 444 444 444 444 444 444 444

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line shows the total of an occupation in an establishment. In a like eccupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to these on preduction by means of

in- in- in- im- er.	Es- tab- lish- ment num- ber.		Industry.	Locality.
546	58	Cinder snappers—concluded	Pig iron	Northern district, U.S.
546 547 548	7	do	Steel ingots	United States United States United States
148	7	Cinder snappers and cinder wheeler	Steel ingots	United States
49	7	Cinder snapper and craneman Cinder snapper and helper	Steel ingots	United States
50 51	9	Cinder snapper and helper	Pig iron	Northern district, U.S.
52	58	Cinder snappers and laborers	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S.
53	9	Cinder anapper and are piler	Pig iron	Northern district, U.S.
54	7	Cinder anapper and steel ponrer	Steel ingots	United States Northern district, U.S.
55	58	Cinder snapper and woolman	Pig iron	Northern district, U.S.
56		Cinder snapper and ore piler Cinder anapper and steel pourer Cinder snapper and woolman Cinder sorters Cinder tappers	Pig iron	Continent of Europe. Northern district, U.S.
58	32 84	do	Pig iron	
59	95	do		Southern district, U.S.
60	101	do	Pig iron	Southern district, U.S. Southern district, U.S. Southern district, U.S.
61 62	114	do	Pig iron	Southern district, U.S.
63	36	do	Pig iron	Continent of Europe Great Britain
64	2	do	Steel ingota	
65	101	Cinder tappers and coke forkers	Pig iron	Southern district, U.S.
66	32	Cinder tapper and driver	Pig iron	Northern district, U.S.
67 68	95	Cinder tappers and fillers	Pig iron	United States Southern district, U.S. Northern district, U.S. Southern district, U.S. Northern district, U.S. Northern district, U.S. Southern district, U.S. Northern district, U.S. Northern district, U.S.
19	84 32	Cinder tapper and gutterman Cinder tapper and iron handler	Pig iron	Northern district, U.S.
70	101	Cinder tapper and iron piler	Pig iron	Southern district, U. S.
n I	32	Cinder tappers and laborers	Pig iron	
72	84	do	Pig iron	Northern district, U.S.
3	95	do	Pig iron	Southern district, U.S. Southern district, U.S.
5	101	Cinder tapper and ladle liner	Pig iron	United States
6	2	Cinder tapper and manganese heater Cinder tapper and ore breaker Cinder tappers' helpers Cinder wheelers	Steel ingota	
7	32	Cinder tapper and ore breaker	Pig iron	Northern district, U.S. Northern district, U.S.
8	84	Cinder tappers' helpers	Pig iron	Northern district, U.S.
0	17	de	Muck bar iron Muck bar iron	United States
1	7	do	Steel ingots	United States
2 -	_	do	Steel ingots	United States
3 -		do	Mixed iron and steel	United States
5 -		do	Mixed iron and steel Mixed iron and steel	United States Continent of Europe
6 -		do	Mixed iron and steel	Great Britain
7 -	_	Cinder wheeler and fireman	Mixed iron and steel	Great Britain
8	.7	Cinder wheeler and fireman	Steel ingots	United States
0	10	Cindermendo	Pig iron	Northern district, U.S. Northern district, U.S.
ĭ	42	do	Pig tron	Northern district, U.S.
2	49 .	do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S. Southern district, U.S.
3	55 .	do	Pig iron	Northern district, U.S.
	109 -	do	Pig iron Muck bar iron	United States
	7 .	do	Muck bar iron	United States
1		do	Finished bar iron	United States
1	1 .	do	Steel ingots	United States
2	7 .	do	Steel ingota	United States
=		do	Steel ingota	United States
		do	Mixed iron and steel	United States
-		do	Mixed iron and steel	United States
	7 1	Cinderman formace	Steel ingots	United States. Northern district, U.S.
	7 (Cindermen and fillers Linderman and grinder Cinderman and helper Lindermen and iron handlers	Pig iron	United States
1	49 6	Cinderman and belier	Pig iron	Northern district, U.S.,
	22 (Cindermen and iron handlers,	Pig iron	Northern district, U.S., Northern district, U.S.,
1	49	indermen and laborers	Pig iron	Northern district, U.S.
	10 (Cindermen and laborers	Pig iron	Northern district, U.S
1	42	. do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S.
1	55	. 40	Pig iron	Northern district U.S.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note about the taken of the industry, as a new series of numbers is used for each.]

	Actual			••••				f workmen	
Work.	daily earnings,	İ	Actual	condition fo	r period.			nuous em- ment.	Mar-
ing days	or daily								gin-
in the	est to	Different	Days of v	rork done.	Earn	ings.		Consequent	Dum-
period.	average daily	employés.		r		l .	Necessary employés.	earnings	bec.
	earnings.		Total.	Average.	Total.	Average.		per em- ployé.	
365	\$1, 80		2, 173	241	\$3, 819	9428	5, 95	2647	546
230	8.86	6	922	154	3, 098	516	4.00	773	547 548 549
230 230	1.83 2.82	1 1	65 22	65	119 62	119	0. 28 0. 10	421 648	548
365	2.09	i	358	258	539	539	0.71	763	550
365 365	1.75	1	575	144	1, 005 225	251 225	1.57 0.38	638 599	551 552
865	1.64 1.93	i	187 133	137 133	225 257	257	0.36	705	553
230	5.40	1 1	20	20	108	108	0, 69	1, 242	554
363 91	1. 68 . 25	1 3	248 213	248 71	417 75	417 25	0. 68 2. 34	614	554
365	1.581	الةا	944	236	1, 495	374	2.59	578	557
122 234	1. 20 1. 32	57	419 2, 640	105 46	501 2, 483	125 61	3.43 7.91	146 441	554 556 556 557 568 559 500
184	1. 374	70	2, 372	48	4, 635	66	18, 83	253	
365	.96	4	712	178	685 263	171	1.95 4.92	351 53	561 503
91 91	. 5F4 . 82		448 182	75 91	203 149	44 78	2.00	75	563
132	2, 23	2 1	78	78	175	175	0.59	296	564
184 365	1. 25 1. 60	1	24 249	249	30 208	10 298 23	0. 13 0. 68	230 583	563 564 563 566
234	1. 161	ī	79	20	92	23	0. 24	389	567
122 365	1. 28 2. 25	4 1 1 1	71	71	9 1 6 0	9 160	0. 06 0. 19	157 828	567 568 569 570
184	1. 33 [6	6	. 8	8	0.03	245	570
365 123	1.49	4	562 44	141	840 5 0	210 50	1. 54 0. 36	546 139	571 572
834 184	1. 134 1. 20	1 1	5	44 5		%	0.01	401	578
184	1. 174	5	510	102	500 422	120 473	2.77 0.53	216 803	574 575
230 132	8, 49 2, 934	1 1	121 80	121 80	235	235	0.53	388	576
265	1. 52	1	143	143	218	318	0.29	556	577 578
122 286	1, 10 1, 254	3 12	216 469	72	288 588	79 49	1.77 1.64	134 859	579
286	1. 35	8	269	90	864	121	0.94	387	520
230 132	1.55 1.60	3	89 120	23 120	307 391	36 191	0. 30 0. 91	257 210	581 582
287	1.65	18	1,608	124	2.650	206	5. 66	475	563 584 565 586 587
168 313	1.701 .481	6 7	224 2, 095	299	382 1, 021	64 146	1.23	287 152	584 585
48	. 38	8 1	322	40	128	15	6.70	18	586
53 230	. 73 1. 66)	3	112	56	82 10	41 10	2.11 0.03	39 383	587
865 Í	1.75	4	939	235	1, 604 4, 806	401	2.57	623	588 589 590 591 592
365	1.55 1.50	17	8, 106 623	183	4, 906	283 468	8.51 1.71	565 548	500
865 365	1. 25	2 2	2,719	813 227	2, 390	283	7.45	455	592
181	1.75	12 26	1,084	86	1, 800 2, 493	150	5.71	315	598
365 155	1. 134 1. 584	5	3, 080 268	118 54	425	134 85	8.44 1.78	414 246	593
313	1. 25	4 1	432	108	538	135	1. 38	390	596
813 313	1. 25 1. 25	1 3	183 421	133 140	164 529	164 176	0. 42 1. 35	380 393	597 508
230	3, 93	4	501	125	1, 970	493	2.18	904	599
78 286	. 62 1, 804	20 15	1,004	50 97	624 2, 631	81 175	12. 87 5. 08	48 516	598 594 593 596 597 598 599 690
313	1. 29	15	1, 453 1, 780	119	2, 304	154	5. GR	405	603
155 230	1.32°	3	25 10	13 10	33 16	17	0. 1 6 0. 04	205 368	603 604
181	1.53	. 3	23	12	85	18	0. 13	275	605
230 365	2.39 1.32	1 1	228 320	228 320	545 423	545 423	0. 90 6. 83	550 482	606
365	1. 62	1	254 103	254	411	411	0.70	59t	607 008
865	1.78	1	103 817	103 204	184 1, 241	184 310	0, 28 2, 24	652 554	609 610
365 365	1. 52 1. 48	1 2	108	108	160	100	0. 30	541	611
365	1.41		507 50	254	716	358 29	1. 39	515 286	412
181	1.58	4'	50 i	13 '	79 1	29 4	0. 28 ¹	266 1	413

(Rach Nee shows the total of an eccapation in an establishment. In a like eccapation the facts for the periods one of equal langth. The establishment remines relate to the cost of production presents for the establishment was obtained. In reference from this table to these on production by means of

Man- gin- al ause- ber.	Es- tal- list- ment rota- ber.	Occupation.	Industry.	Locality.
614		Cindermen and laborers-concluded	Mixed fron and steel	United States
410		do	Mixed iron and steel	United States
616	-	Cinderman and ladle cleaner	Steel ingots	Continent of Europe
617	55	Cindermen and metal carriers	Pig iron	Northern district, U.S.,
619	7	Cindermen and metal wheelers Cinderman and scrap loader	Steel ingots	United States
629	2	Cinderman and vesseiman	Steel ingota	United States
621		Civil engineers	Bituminous coal	United States
622	26	Cleanersdo	Ply iron	Great Britain
623	Berrio Co		Steel rails	United States
625		do	Mired iron and steel	Continent of Europe
626	***	do	Mixed iron and steel	Continent of Europe
628	156	da	Coke	Continent of Europe
629	36	Cleaners, enginebouse	Pig iron	Great Britain
630	37	dn	Pig iron	Great Britain
631	156	Cleaners, lamp	Bituminous coal	Continent of Europe
633	58	Cleaners, office	Mixed iron and steel Pig iron	Great Britain
634	36	do	Pig iron	Great Britain
635	37		Pig iron	Great Britain
637	1	do	Steel billets	United States
638			Mixed iron and steel	United States
639	_	Cleaners, raii bank	Mixed fron and steel	Great Britain
640		Cleaners, rail bank	Mixed iron and steel	Great Britain
642	22	Cleaners, road	Mixed iron and steel Pig iron	Great Britain
643	6	Cleaners, track	Coke	United States
644 644	22	Cleaner, stack, and filler Cleaner, stack, and filler Cleaner, stack, and keepers' belper Cleaner, stack, and stoveman	Pig iron	Northern district, U.S United States Northern district, U.S Northern district, U.S Northern district, U.S
646	22 22	Cleaner, stack, and keepers helper	Pig iron	Northern district, U.S
647	1	Cierks and weighmen	Iron ore	United States
648	_	Clippers	Steel rails	Continent of Europe
649		Coachers	Mixed iron and steel Mixed iron and steel	Great Britain
651			Mixed fron and steel	Great Britain
652	-	Coal dumper	Steel blooms	United States
653	1	Coal handlers	Steel ingots	United States
655	170	Coal igniter.	Bituminous coal	Continent of Europe
654	43	Coal screeners	Pig iron	Great Britain Northern district, U.S
658		Coal suppliers	Mixed iron and steel	Continent of Europe
659	101	Coal unloaders.	Mixed iron and steel Pig iron	United States Southern district, U.S
060	7	do	Muck bar iron	United States
662	- 1	do	Steel ingota	United States
663		do	Mixed iron and steel	United States
884		do	Mixed fron and steel	Continent of Europe
665	101	Coal wheelers and firemen	Mixed iron and steel	Continent of Europe Continent of Europe Southern district, U.S
667	101	Coal wheelers and firemendo	Pig iron	United States
668	î	Coal wheeler and iron handler	Steel ingots	United States
669	1	Coal wheeler and iron handler Coal wheeler and laborer	Steel ingots	United States
671	7	Coal wheeler and unloader	Steel ingets	United States
672		Coke carriers	CokeSteel ingots	United States Continent of Europe
613	33	Coke cleaner and ore breaker	Pig iron	Northern district, U.S Northern district, U.S
674	32	Coke cleaner and ore breaker	Pig iron	Northern district, U.S
676	101	Coke drivers	Mixed iron and steel Pig iron	Great Britain
677	101	Coke drivers and laborers	Pig iron Pig iron	Southern district, U. S Southern district, U. S
	101	Coke driver and teamster	The same	Southern district, U. S

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual c	condition fo	r period.			f workmen nuous em- nent.	Mar.
ing days in the period.	or daily rate near- est to average daily	Different employés.	Days of v	vork done.	Earn	ings.	Necessary employés.	Consequent average earnings per em-	gin- al num- ber.
	earnings.		Total.	Average.	Total.	Average.		ployé.	
313 155 78	\$1. 10\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1 1	262 3	262 3 69	\$213 4 44	\$313 4 44	0. 84 0. 02 0. 88	\$374 207 50	614 015 616
181 230	2.37	3	838 453	113 151	803 1, 560	268 520	1. 87 1. 97	480 792	617 618
230 132	2.91 2.66	3 1 1	135 115	135 115	393 306	393 306	0. 59 0. 87	670 351	619 620
313 78	1.78	5 1	45 78	9 78	80 21	16 21	0. 15 1. 00	556 21	621 622 623
78 318	1.50	1 1 1 2 1 1 2 2 5	163 236	82 236	75 854	78 354	2. 09 0. 75	36 470	894
313 92	. 281 . 58 . 25	i	1, 172 92	293 92	335 53	81 53	2. 74 1. 00 1. 89	89 53 19	625 626 627 628
265 265	.25 .31 .264	1	107 53 78	54 53	27 16 21	14 16 21	0. 15 1. 00	110	628
78 78 77	244	2	156 153	78 78 77	88 52	19 26	2. 00 1. 99	19 26	629 630
48 813	.50	5	209 200	42 300	105 113	21 113	4. 35 0. 98	24 118	631 632 633
78 78	.16	1 1 1 1	78 78	78 78	13 11	18 11	1.00 1.00	13 11	634
313 202	1. 00 1. 00	1	16 30	16 80	16 30	16 30	0. 05 0. 15	813 202	636 637
313 48	. 57 . 86	1	813 48	813 48	180 18	180 18	1. 00 1. 00	180 18	638 639
58 48 865	. 504 . 46 1, 40	7	84 243 183	42 85 92	45 112 261	23 16 131	1, 58 5, 07 0, 50	28 22 521	640 641 642
92 865	.98	15 15	516 291	34 291	506 410	34 440	5. 60 0. 80	90 552	643 644
365 865	1.50 1.55	1 1	18 857	18 857	27 554	27 554	0. 05 0. 98	548 566	645
865 78	1.62	8	778 526	156 66	1, 260 263	253	2. 18 6. 74	591 39	647 648
156 48	1.02	59	496 2, 103	124 36	507 1, 196	127 20	8. 18 43. 81	150 27	649 650
58 144	(a) 1.50	20	(a) 166	(a) 106	862 254	43 254	(a) 1.15	(4) 2 3 0	651 652
318 92	1.53 .72	39 1 1	183 89	5 39 78	283 28	7 28	0. 50 0. 43	479 66	658 654 655
91 865 92	1. 25½ 1. 32 . 48	4	78 961 175	240 14	97 1, 267 84	97 317 21	0. 86 2. 64 1. 90	113 481 44	656 657
313 184	(a) 1.00	(b) 5	(a) 57	(a)	2, 166 57	(b) 21 11	(a) 0, 31	(e) 184	658
155 813	1.50		208 459	42 33	313 709	63 51	1. 34 1. 47	233 483	660
313 155	1. 25	1 14	324 789	824 56	403 1, 100	405 79	1.04 . 5.08	391 216	658 639 600 861 662 663 664 665
313 79	.44	12	3, 009 156	231 78	1, 325 83	110 42	9. 61 1. 97	138 42	664 665
184 313	1.27	1	155 7	78 7	197 10	90 10	0. 84 0. 03	234 447	666 667
313	2. 00 1. 50	1 1	40	40	6 60	60 60	0. 01 0. 13	626 470	068 689
213 92 77	1. 561 2. 15	3 2	30 133	30 67	47 286	47 143	0. 10 1. 45	490 198	670 671
865 365	1. 50 1. 484	1 1	119 87 298	80 87 298	71 54 442	87 51 442	1. 55 0. 10 0. 82	48 533 541	672 678 674
53 53 184	1.15	1 2 23	100 532	50 23	48 600	24 26	1. 89 2. 84	25 211	675 676
184	1.07	7	345 147	49 147	370 156	53 156	1. 88 0. 90	197 195	677 678

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

b Mumber of employée not given.

Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

in- al al aum- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
614		Cindermen and laborers—concluded	Mixed fron and steel	United States
615	_	do	Mixed iron and ateel	United States
616		Cinderman and ladle cleaner	Steel ingots	Continent of Europe
617 618	85	Cindermen and metal carriera Cindermen and metal wheelers	Pig iron Steel ingote	Northern district, U.S. United States
619	7	Cinderman and scrap loader	Steel ingota	United States
620	2	Cinderman and vesselman	Steel ingota	United States
621 622	36	Civil engineers	Bituminous coal	United States Great Britain
623	30	Cleanersdo	Pig iron	Continent of Europe
624	-	do	Steel rails	United States
625	-	do	Mixed iron and steel	Continent of Europe
626 627	156	do	Mixed iron and steel Bituminous coal	Continent of Europe Continent of Europe
628	_	do	Coke	Continent of Europe
629	36	Cleaners, enginehouse	Pig iron	Great Britain
630 631	37 156	Cleaners, lamp	Pig iron Bituminous coal	Great Britain Continent of Europe
632	100	Cleaners, mill	Mixed iron and steel	Great Britain
633	58	Cleaners, office	Pig iron	Northern district, U.S.
634	36	do	Pig iron	Great Britain
636	1	do	Pig iron Steel ingota	United States
637		do	Steel billets	United States
638	_	do	Mixed iron and steel	United States
639		Cleaners, rail bank	Mixed iron and steel Mixed iron and steel	Great Britain
641		Cleaners, road	Mixed iron and steel	Great Britain
	22	Cleaners, stack	Pig iron	Northern district, U.S.
643	22	Cleaners, track Cleaner, stack, and filler	Pig iron	United States
645	22	Cleaner, stack, and keepers' helper	Pig iron	Northern district, U.S. Northern district, U.S.
646	22	Cleaner, stack, and stoveman	Pig iron	Northern district, U.S. Northern district, U.S.
648 649	1	Clerks and weighmen	Iron ore	United States Continent of Europe
649		Clippersdo	Steel rails	Great Britain
650		Coachers	Mixed iron and steel	Great Britain
651	_	do	Mixed fron and steel	Great Britain
653	1	Coal dumperCoal handlers	Steel blooms	United States United States
654	-	Coal igniter	Mixed iron and steel	Continent of Europe
655	170	Coal inspector	Bituminous coal	Great Britain
656	42	Coal screeners	Pig iron	Northern district, U.S. Continent of Europe
658	_	Coal unloaders.	Mixed iron and steel	United States
659	101	Coal wheelers	Pig irou	United States Southern district, U.S.
660	1	dodo	Muck bar iron Steel ingots	United States
662		do	Mixed iron and steel	United States
663	_	do	Mixed iron and steel	United States
665		do	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe
666	101	Coal wheelers and firemen	Pig iron	Southern district, U.S.
667	1	do	Steel ingots	United States
668	1	Coal wheeler and iron handler	Steel ingots	United States
669	1	Coal wheeler and laborer Coal wheeler and unloader	Steel ingota	United States United States
671	6	Coke bosses	Coke	United States
672	_	Coke carriers	Steel ingots	Continent of Europe Northern district, U.S.
674	32	Coke cleaner	Pig iron	Northern district, U.S.
675	32	Coke collectors	Pig iron	Northern district, U.S. Great Britain
676	101	Coke drivers	Pig iron	Southern district. U. S.
677	101	Coke drivers and laborers	Pig fron	Southern district, U. S.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		≜ctual c	ondition fo	or period.		had conti	f workmen nuous em- nent.	Mar-
ing days in the period.	or daily rate near- est to average	Different employés.	Days of w	rork done.	Earn	ings.	Necessary employés.	Consequent average earnings	gin- al num- ber.
	daily carnings.	ampio) es	Total.	Average.	Total.	Average.	employes.	per em- ployé.	Ì
965 184	\$1.43	18	4, 830	268	\$6,847	\$380	13. 23	\$517	679
305	1.19	96	2, 509 256	27 256	8, 108 870	82 870	14. 12 0, 70	220 528	680 681
184	1.001	29	493	17	541	19	2.68	202	663
365 313	1.46	2 6	545 306	273 51	795 549	308 92	1.49	582 562	683 683 684
365	. 53	i	346	346	180	180	0, 96 0, 95	190	685
230	3. 103 . 574	1 2	349	175	1.044	542	1.52	714	686
78 230	. 57		568 169	63 169	328	36 313	7.28	45	687 688
90	1. 83 . 69	1 6	477	80	313 829	55	0. 73 5. 30	426 62	689
313	1.874	į	263	131	493	246	0.84	587	689 600
132	2.18	2 2	148	74	323	162	1.12	288	.691
230 168	8. 21a 1. 00	i	370 142	185 142	1, 190 142	595 142	1, 61 0, 85	740 168	602
313	.54		828	276	419	150	2.65	170	691 692 698 694 695
144	1.86	\ 2	156	78	290	145	1. OR	268	605
181	1.40	1 10	179 56)	179 56	251 313	251 31	0. 99 7. 19	254	605
122	1. 25	1	94	94	117	117	0.77	152	808
313	1.604	19	921	48	1, 476	78	2.96	502	809 700
202 365	1.50	!	600 326	67	901 535	100 535	2. 97 0. 89	308 509	700
313	1.64	1 1	313	326 313	600	600	1.00	600	701 702
318	1,73	1 4	450	113	778	195	1.43	541	703
313	1.70	1 1	10	10 15	17	17 26	0.03	532	704
202 313	1.734	1 1	15 274	15 69	26 300	100	0. 0 7 0. 88	350 456	705 796
313	2.09	1	128	128	268	268	0.41	655	707
313	1.66	1 1	124	124	206	206	0.40	520	708
202 202	1. 30½ 1. 574	1 1 1 9	33 146	83 146	46 230	46 230	0. 16 0. 72	282	708 710
318	1. 578 . 664	و ا	2, 126	236	1,411	157	6.79	318 208	711
313	. 56	1	280	280	155	155	0.89	173	712
318 202	1.37	2 2	443 128	111	564 248	141	1. 42 0. 63	398 291	718
202	1. 93 1. 68	1 1	202	101	339	124 170	1.00	239	714
202	2.00	1 2	118	118	236	236	0.58	404	716
313	1.12}	2	247	124	282	141	0. 79	357	717
202 132	1.00	1	210	53	403	101	0.01	202 253	718
132	1. 134	. 1	75	75	85	85	0. 57	150	720
230	2.00	2	245	128	491	240	1.07	461	721
230 132	2. 571 1. 10	1 2	153 176	153 88	294 194	394 97	0. 67 1. 33	502 146	723 723
230	1.70	2 1	132	132	221	221	0. 57	885	724
77	.44	1	70	70	31	31	0.91	34	725
78 202	. 88 1. 741	1 3	67 327	100	59 570	59 190	0. 86 1. 62	69 352	726 727
168	1.75	1	137	137	218	248	0.82	304	728
155	. 90	3	113	57	103	51	0.78	140	729
313 92	2 221	8	621 82	207 82	1, 381 21	450 21	1.98 0.89	696	730 731
313	. 581	1 7	1, 083	155	631	90	2.46	182	,733
48	.46	13	98	8	45	3	2. 64	22	733
156 53		81	336	168 (a)	417 868	209 28	2. 15 (a)	(a) 194	731
313	2 21	14	1,007	(4) 72	2 221	159	2.22	691	736
313	1.361	1 8	171	21	233	29	0, 54	426	737
313	1. 49¥ 1. 50	1	68	35 68	103 108	52 108	0.23 0.23	467 497	738 739
313		2	150	75	225	113	0.48	470	740
313	2.05	5	446	89	914	183	1.43	641	741
313		1 1	65 421	65	97 742	97 247	0. 21 1. 25	467	742
313		12	403	140	142	14	1. 35 8. 16	553 20	743
53	.41	6	405 250	42	100	18	4.73	20 23	745
153	1.44	7	360	51	519	74	2. 32 1. 25	223	744
155	1.84	, ' 2	195	k3 i	1 352	176	1.25	1 280	747

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

(Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentafor the establishment was obtained. In referring from this table to those on production by means of

n n n	Es- tab- lish- ment num- ber.	. Occupation.	Industry.	Locality.
48		Crucible men	Steel ingots	Continent of Europe
48 49 50	1	Cupola fettlers and helpers	Steel ingota	United States Great Britain
51 52 53	7 7 2	Cupola firemen	Steel ingots Steel ingots	United States United States United States
54 55		Cutters	Mixed fron and steel Steel billots	Great Britain United States
55 56 57		do	Mixed from and steel Mixed from and steel	Continent of Europe Continent of Europe
58	26	do	Mixed iron and steel Bituminous coal	United States
60	26	Cutters and cutters' helpers Cutters and grinders	Bituminous coal Mixed iron and steel	United States Great Britain
62	26 26 26	Cutters' helpers Cutters' helper and driver Cutters' helpers and loaders	Bituminous coal Bituminous coal Bituminous coal	United States United States United States
64 65 66	29	do	Finished bar iron Mixed iron and steel	Great Britain
67 68	148	Daubers	Coke Bituminous coal	Continent of Europe Dominion of Canada
70	170	Dippers	Mixed iron and steel	Great Britain United States
$\frac{71}{72}$	=	Dipper and laborer Dipper and weighman	Mixed iron and steel Mixed iron and steel	Great Britain United States
73	_	Doggers	Mixed iron and steel Mixed iron and steel	Great Britain
75	_	Dogger and unloader	Mixed iron and steel Mixed iron and steel	Great Britain
76 77 78	_	Dolomite breakers	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe
79	_	Doorboysdo	Steel billets	United States
81		dodo	Steel rails	Continent of Europe
82 83		do	Mixed iron and steel	United States United States
84 85		Door boy and laborer	Mixed iron and steel Steel blooms	Continent of Europe United States
86		Door boy and lay-over. Door boys and stampers. Door boy and straightener	Mixed iron and steel Mixed iron and steel	United States
88		Door boy and straightener	Mixed iron and steel Steel billets	Continent of Europe United States
90	_	Door boy and table boy Door boy and transmitter Doorkeeper	Steel billets Mixed iron and steel	United States
92 93	_	Doormen	Pig iron	Continent of Europe Continent of Europe Continent of Europe
94	_	Doorman and hooker-up Doormen and laborers	Steel blooms	United States
95 96	7	do	Steel blooms	United States
97 98	7	Doorman and pusher Doorman and telegraphman	Steel blooms	United States
99	7	Doorman and tester	Steel ingots	United States
01		Doublers	Mixed iron and steel Mixed iron and steel	United States
03		Doubler and laborer Drag-backs	Mixed iron and steel Mixed iron and steel	United States
05	_	Drag-downs	Mixed iron and steel	United States United States
07	_	Drag-down and heater	Mixed iron and steel	United States
80	7	Drag-offs	Mixed fron and steel Muck bar fron	Great Britain United States
10	17	do	Muck bar fron	United States United States
12	26	dodo	Muck bar Iron	United States

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables 1 to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual (ondition f	or period.		Condition in had continuous plays	f workmen nous em- nent.	Mar
ing days in the period.	or daily rate near- est to average	Different	Days of w	ork done.	Earr	nings.	Necessary employés.	Consequent average earnings	gin. al num ber.
	daily carnings.	employés.	Total.	Average.	Total.	Average.	emphoyes	per em- ployé.	Ŀ
777 313 538 230 230 230 232 53 202 97 48 313 313 313 313 313 313 314 48 313 48	90. 961 1. 35 (6) 4.21; 8. 673 2. 12; 8. 673 2. 35; 2. 04; (6) 1. 83 1. 87; 1. 25 1. 46; 1. 4	(a) 2 2 4 4 1 7 5 10 11 12 3 2 15 5 3 4 4 13 6 6 4 4 1	203 136 (a) 378 399 316 52 727 311 637 455 1, 212 421 (a) 905 141 1309 292 527 675 1, 132 1, 056 1, 789	(a) (20) 79 79 79 79 79 79 79 79 79 79 79 79 79	\$176 183 188 2, 437 1, 662 1, 162 2, 272 2, 273 2, 273 1, 654 2, 177 1, 654 2, 152 365 373 1, 524 4, 233 7, 200 1, 542 1,	\$50 (b) 1, 219 841 291 88 825 22 220 220 287 210 210 216 116 1123 25 411 117 706	2.64 0.1 0.1 1.177 2.96 2.93 8.94 0.95 1.83 (a) 2.95 0.95 1.86 1.87 1.86 1.87 1.86 1.87 1.86 1.87 1.86 1.87 1.86 1.86 1.86 1.86 1.86 1.86 1.86 1.86	\$67 421 (a) 1,483 1,483 1970 485 29 631 41 557 22 738 639 (a) 577 588 124 479 588 124 129 102 454 131 741	748 740 750 751 762 765 754 755 75 756 760 761 762 766 766 7767 770 7712
313 48 48 313 318 318 319 202 122 78 318 155 155 592 202 202 202 202 202 203 318 318 318 318 318 318 168 48 44 148	1. 944 - 485 - 486 - 488 - 488 - 488 - 488 - 851 - 769 - 769 - 770 1. 699 - 700 2. 031 - 700 - 7	1 11 11 11 12 24 77 10 5 44 11 11 12 25 11 11 18 11 12 26 15 7	283 283 438 438 274 1, 574 1, 541 285 287 1, 541 7 23 285 29 286 202 110 48 48 27 48 48 28 48 48 28 48 48 29 29 29 29 29 29 28 20 28 20 28	283 62 47 40 76 207 197 797 197 197 25 44 174 25 55 111 129 84 15 110 23 35 46 178 46 120 50 50 50 223	550 30 125 264 1, 097 1, 942 1, 110 85 665 188 288 7 23 85 5 100 102 202 213 321 321 324 319 327 403 703 134	550 800 245 247 1000 688 477 133 13 13 15 1000 1552 153 221 477 61 83 221 276 13 20 13 21 15 16 17 18 18 18 18 18 18 18 18 18 18	0.90 1.485 1.7.0 1.6.0 1.6.0 1.0.0 1	608 223 225 228 229 230 240 240 240 240 240 250 250 250 250 250 250 250 250 250 25	778 7776 7776 7778 7778 7781 7891 7892 7892 7893 7894 7896 7997 7996 7996 7996 7996 7996 7996
286 286 286 286 287	1.88 1.83 1.75 (a) 2.00	2 4 4 10 6	446 595 606 (a) 1, 392	149 153 (a) 232	838 1,089 1,061 1,852 2,781	419 272 265 185 464	1.56 2.08 2.13 (a) 4.85	537 523 501 (a) 574	\$10 \$11 \$13 \$13 \$14

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. S Number of employee not given.

flack line shows the total of an occupation in an establishment. In a like occupation the facts for ites periods are of equal length. The establishment numbers relate to the cost of production presents the establishment was obtained. In referring from this table to those on production by means of

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
		Drag-outs-concluded	Mixed iron and steel	United States
15		do	Mixed iron and steel	Continent of Europe
17	_	do	Mixed iron and steel	Continent of Europe Continent of Europe
Ek	_	Drag-out and hot-bank man	Mixed iron and steel	Great Britain
10		Drag-out and laboter	Mixed iron and steel	Great Britain
10	=	Drag-outs and lay-overs	Mixed iron and steel Mixed iron and steel	United States
22		Drag-outs and lay-overs	Steel blooms	United States United States
123	-	do	Mixed iron and steel	United States
(8 4)	13	do	Coke	United States United States
JA.	19	do	Coke	United States
37	23	do	Coke	United States
ME	28	do oþ	Coke	United States
(A)	29	Drawer and elevator tender	Coke	United States United States
10	19	Drawers and forkers	Coke	United States
12	23	Drawer and heaters' helper	Coke	United States
43		Drawer and heaters' helper	Steel blooms	United States
11	13	Drawers and laborersdo	Coke	United States
ad	23	do	Coke	United States
ai	13	Drawer and masons' helper Drawer and puddlers' helper	Coke	United States
sit fi	-	Drawer and puddlers' helper	Mixed iron and steel	United States
dia		Drawer-back and scraper	Mixed iron and steel Mixed iron and steel	United States
41		Dressers	Steel rails	Continent of Europe
42	-	Dressers helpers	Steel rails	Continent of Europe
183	1	Driers	Steel ingots	United States
44	72	Drift cutters and miners Drill boys	Iron ore	United States United States
45	43 72	do	Iron ore	United States
47	-	Drill carrier	Mixed iron and steel	Great Britain
18	_	Drill filers	Mixed iron and steel Mixed iron and steel	Great Britain United States
17 18 10 10 10 10 10 10 10 10 10 10 10 10 10		Drill grinder. Drill grinders' helper	Mixed iron and steel	United States
44	72	Drill runner	Iron ore	United States
44	46	Drill sharpeners	Iron ore	United States
73		Drillersdo	Steel rails	Continent of Europe Great Britain
**		do	Mixed from and steel	Great Britain
	- 26	do	Bituminous coal	United States
	. 12	do	Bituminous coal	United States
	2 42	do	Iron ore	United States
		do	Iron ore	United States
	3	Drillers and miners	Iron ore	United States
	-	Driller and trapper	Iron ore Bituminous coal	United States
		Dritters' helpers	Mixed from and steel	Great Britain
	1	sas-do	Iron ore	United States
		Drillamith	Iron ore	United States
		Drivers	Steel rails	Northern district IT S
		100,40	Pig iron	Northern district. U. S.
		mentlo oliveet	Pig iron	United States. Unitinent of Europe Northern district, U. S. Northern district, U. S. Southern district, U. S. Southern district, U. S.
		do	Pig iron	Southern district, U. S.
		100	Mixed iron and steel	United States
		70	Bituminous coal	United States
			Bituminous coal	United States
			Bituminous coal	United States
			Bituminous coal	United States
		2 thereseeves and a second	Bitaminous coal	United States
		***************************************	Bituminous coal	United States
		Harriston	Bitumipous coal	United States

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for ea.h.]

Work.	Actual daily earnings,		Actual	ondition fo	r period.		had conti	if workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of v	ork done.	Earn	ings.	Necessary	Consequent average	al num ber
period	daily earnings.	employés.	Total.	Average.	Total	Average.	employés.	per em- ployé.	Der
168 813 313 313 313 313 313 313 313 313 31	#1. 824 - 50 - 50 - 51 - 52 - 52 - 53 - 53 - 54 - 53 - 53 - 54 - 5	12 35 24 6 1 1 2 2 4 1 1 2 1 2 1 3 1 1 1 1 2 1 2 1 3 1 1 1 1	904 8, 219 5, 283 220 47 66 1, 2019 16, 771 13, 129 16, 771 110, 129 17 24, 110 388 363 14 1, 157 209 578 343 237 578 343 237 672 1, 2019 16, 2019 17 858 16, 2019 17 858 18,	75 235 220 27 47 46 61 181 140 23 80 122 50 264 110 97 156 93 32 14 64 209 (a) 163 121 11 7 215 67 (a) (a) 66 27 188 125 29 (a) 166 162 29 (a) 166 162 46 29 181 175 377 42 42 48 92 181 175 377 42 168 125 166 167 167 168	\$1,650 4,924 3,057 1833 27 1844 4,180 30,718 4,110 30,718 21,531 5,712 5,712 5,712 5,712 1,311 279 277 1,391 442 275 381 275 381 284 422 133 441 766 228 462 12 371 1,441 766 228 462 12 371 3,183	\$138 141 127 227 225 726 636 228 400 146 201 137 63 147 277 277 277 277 277 277 277 2	5.38 26.28 2	#307 188 181 299 28 26 1844 455 455 455 455 455 455 455 455 455	8 8 8 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. H. Ex. 265——32

| Stack line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents the establishment was obtained. In referring from this table to those on production by means of

tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
-			
	Drag-outs—concludeddo	Mixed iron and steel Mixed iron and steel	United States Continent of Europe
	do	Mixed iron and steel	Continent of Europe
	Drag-out and hot-bank man	Mixed iron and steel	Great Britain
	Drag-out and hot-bank man	Mixed iron and steel	Great Britain
-	Drag-out and laborer	Mixed iron and steel Mixed iron and steel	Great Britain United States
=	Drawers	Steel blooms	United States
-	Drawersdo	Mixed iron and steel	United States United States
	do	Coko	United States
130	do	Coke	United States
	do	Coke	United States
28	do	Coke	United States.
29	Drawer and elevator tender	Coke	United States United States
28	Drawer and elevator tender	Coke	United States
19	Drawers and forkers	Coke	United States United States
	Drawer and heaters' helper	Steel blooms	United States United States United States
13	Drawers and laborers	Coke	United States
19	do	Coke	United States
	Drawer and masons' helper Drawer and puddlers' heiper	Coke	United States
13	Drawer and puddlers' heiper	Mixed iron and steel	United States
-	Drawer-back and scraper	Mixed iron and steel	United States
-	Drawer-back and scraper	Mixed iron and steel	United States
	Dressers	Steel rails	Continent of Europe Continent of Europe
1	Driera	Steel ingots	United States
72	Drift cutters and miners	Iron ore	United States United States United States
43	Drill boysdo	Iron ore	United States
72	Drill carrier	Iron ore	Great Britain
	Drill filers	Mixed iron and steel	Great Britain
1-	Drill grinder	Mixed iron and steel	United States
	Drill grinders' helper	Mixed iron and steel	United States United States
72 46	Drill runner	Iron ore	United States
72	Drillers	Steel rails	Continent of Europe
-	do	Mixed iron and steel	Great Britain
26	do	Mixed iron and steel Bituminous coal	Great Britain United States
_	do	Bituminous coal	United States
- 12	do	Iron ore	United States
÷ 42	do	Iron ore	United States
ž	dodo	Iron ore	United States
	Drillers and miners	Iron ore	United States
-	Driller and trapper	Bituminous coal	United States
1	Drillers' belpers	Mixed iron and steel	Great Britain
j	do	Iron ore	United States
	1 Prillamith	Steel rails	Continent of Europe
	Drivers	Pig iron	Northern district, U. S.
	mando	Pig iron	Northern district, U. S Northern district, U. S Southern district, U. S
		Pig iron	Southern district, U. S.
	140	Mixed iron and steel	United States
	1990	Mixed iron and steel	Continent of Europe
	10	Bituminous coal	United States
	10	Bituminous coal	
	10	Bitaminous coal	United States
	***************************************	Bituminous coal	United States
	***************************************	Bituminous coal	United States
	***************************************	Bituminous coal	United States United States
	***************************************	Bituminous coal	Dominion of Canada

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for ea h.]

Work-	Actual daily earnings,		Actual	condition fo	r period.	•	Condition i	if workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of	work done.	Earn	ings.	Necessary	Consequent average	gin- al num ber
,	daily earnings.	employés.	Total.	Average.	Total	Average.	employés.	per en- ployé.	-
168 313 313 486 488 155 230 313 313 313 313 313 313 313 313 313 3	\$1.82\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	12 25 24 6 11 27 13 104 107 109 108 109 109 109 109 109 109 109 109	904 8, 219 5, 283 220 47 47 47 121 1, 259 16, 771 13, 129 4, 524 2, 239 4, 752 110 388 3 14 4, 1, 157 200 (4) 253 237 578 343 462 421 400 1600 212 111 7 858 18 2, 253 3 (4) (5) 40 160 (6) 60 12 11 7 858 18 2, 253 3 (4) (5) 60 160 (6) 60 12 11 7 858 18 18 2, 253 3 (4) (5) 60 160 (6) 60 12 11 7 858 18 18 2, 253 3 (4) (5) 60 160 (6) 60 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	75 235 220 37 47 46 61 181 140 23 23 24 20 264 110 97 156 93 237 74 64 209 (a) 253 237 74 64 114 154 60 131 40 53 121 17 215 67 (a) (a) (a) 68 122 29 (a) 166 162 48 92 29 (a) 166 162 48 92 181 175 168 177 168 67 181 177 168	\$1,650 4,924 3,057 133 275 144 4,100 30,718 21,533 4,110 30,718 21,533 571 1,531 270 123 571 1,391 1,441 276 318 422 133 1441 376 466 228 466 311 476 666 313 3,183 255 734 451 351 3,183 3,183 3,183 3,183 451 551 1,210 736 6,710 736 6,710 737 7,844 736 6,710 737 7,844 736 736 737 7,844 736 737 7,844 736 737 7,844 736 737 7,844 738 734 736 737 7,844 736 7,734 736 7,734 737 7,844 736 7,734	\$138 141 127 22 27 636 628 440 146 137 63 317 113 143 143 143 143 143 143 143 143 143	5. 38 26. 26 16. 85 0. 96 0. 75 15. 81 26. 25 16. 82 26. 26 16. 83 16. 85 16. 8	\$307 188 181 181 29 28 871 871 511 1156 871 511 1156 305 438 350 461 378 396 467 604 478 (a) 427 408 370 108 31 107 408 327 408 408 408 408 408 408 408 408 408 408	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. H. Ex. 265—32

[Both line shows the total of an eccepation in an establishment. In a like eccepation the facts for the periods are of equal length. The establishment numbers relate to the cost of preduction presentafor the antablishment, was obtained. In referring from this table to these an production by means of

64.00	Ea- tab- lish- ment man- hear.	Occupation.	Industry.	Locality.
81	156	Driver-concluded	Bituminous coal	Continent of Europe
83 84 85 86 87 88 89 99 90 90 90 90 90 90 90 90 90 90 90 90	130	60	Bituminous coal	Continent of Europe Great Britain
85	5	40	Coke	United States
25	42	do	Iron ore	United States
2	44	do	Iron ore	United States
篩	45	60	Iron ore	United States
90	48 51	do	Iron ore	United States
91	51	do	Iron ore	United States
92	56	do	Iron ore	United States
93 54	91	Driver, boss	Bituminous coal	United States
95	109	Driver and flagman	Bituminous coal	United States
96	96	Driver and hooker-on	Bituminous coal	United States United States
97	148	Drivers and laborers	Bituminous cost	Dominion of Canada
98	25	Drivers and loaders. Drivers and miners.	Iron ore	United States
133	109	Drivers and miners	Bituminous coal	United States
199 100 101 102 103	100	do	Bituminous coal	United States United States
002	_	do	Bituminous coal	United States
103	-	40 6b	Bituminous coal	United States
ю4.	42	do	Iron ore	United States United States
06 06	148	Driver and miners' helper	Iron ore	Dominion of Canada
107	140	Theirer and slag hauler	Bituminous coal	United States
800	109	Driver and trapper	Bituminous coal	United States
209	1	Dropmendo	Steel ingots	United States
10	12	Dry boys	Steel billets	United States United States United States
112	72	Deyman	Iron ore	United States
913	22	Drymen	Pig iron	Northern district II S.
914	58	do	Pig iron	Northern district, U. S. Southern district, U. S.
915	109	do	Pig 1ron	Southern district, U. S.
016	1	do	Steel ingots	United States
917 918		do	Mixed iron and steel.	Continent of Europe
919		do	Mixed iron and steel	Continent of Europa
920	18	do	Bituminous coal	United States United States
921	55	do	Bituminous coal	United States United States
022 023 024	109	do	Bituminous coal	United States
023		do	Bituminona coal	United States
925		do	Bituminous coal	United States
926	156	do	Bituminous coal	Continent of Europe
927	6	do	Iron ore	United States
928 929	51	do	Iron ore	United States
930	72	do	Iron ore	United States
031	-	Dumper, boss	Iron ore Bituminous coal	United States
932		Dumper, boss Dumper and heaters' helper. Dumpers and iron handlers	Mixed iron and steel	United States
931	58	Dompore and laborate	Pig iron	United States
934 935	1	Dumper and loader	Steel ingots	United States
930		Dumper and loader	Steel ingots	United States
937	-	Dumpers and miners	Bituminous coal	United States
938		do	Iron ore	United States
939 940		Dumper and oiler	Trop ore	United States
941		Dumper and trimmer	Bron ore	United States
94:		Dumping clet ks	Iron ore	Tinital States
043	_	Elevator tenders	Steel incots	Continent of Furope
964		do	Steel ingota	Continent of Europe
943		do	Steel rails	Continent of Europe Continent of Europe Continent of Europe Co: timent of Europe
940			Bituminous coal	Great Britain
948		do	Coke	United States
943	1	Engine drivers 4	Mixed iron and steel	
230	36	Engine temiers, blast	Pig iron	Great Britain

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual c	ondition fo	r period.		Condition i	f workmen mous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of v	vork done.	Earn	ings.	Necessary	Consequent average earnings	al num ber.
	daily earnings.	employės.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
77 91 313 313 313 313 313 313 313 313 313	#0. 534	93891141112122217221112222851201212128289330114113111121112214408232	476 837 2,576 7,435 577 309 15,513 2,195 573 309 15,513 2,195 573 309 16,171 409 81 176 (a) (a) (b) 177 237 778 211 290 361 177 237 788 907 768 907 768 907 361 1,403 291 290 764 1,403 1,902 291 1,403 1,902 291 290 764 1,503 1,90	53 43 86 181 105 109 128 109 128 109 128 109 128 109 119 128 128 128 128 128 128 128 128	\$254 73 287 2, 664 6, 857 2, 935 780 355 84 41 683 326 852 99 267 277 243 143 143 144 1, 835 1, 164 2, 811 1, 177 1, 1	\$28 87 96 167 160 140 200 3555 8 10 163 153 151 163 199 245 163 199 245 113 106 154 154 154 154 154 154 154 154	6.032 6.032 6.032 7.085 6.032 7.085 6.092 7.085 6.092 7.085 6.092 7.085 6.092 7.085 6.092 7.085 7.	#11 78 924 289 271 419 422 289 271 419 422 428 289 271 419 422 428 289 271 777 718 824 475 218 237 476 28 49 49 49 49 49 49 49 49 49 49 49 49 49	888 888 888 888 888 888 888 888 888 88

^{· 4} Paid by the quantity. The daily rate of pay and days of work done cannot be given.

· ~. ;

(Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

	G			
far- in- al um- er,	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
951 952	36 36 10	Engine tender, electric	Pig iron	Great Britain
953	30	Engine tenders, lift Engine wipers	Pig iron	Northern district II S.
954	101	do	Pig iron	Great Britain. Northern district, U.S. Sonthern district, U.S.
955	9	Engineers	Pig iron	MOLIDSEL GISTLICE DES
956 957	10	do	Pig iron	Northern district, U.S.
958	22 32	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S
959	41	do	Pig iron	Northern district, U.S.
960	49	do	Pig iron	Northern district, U.S.
961	55	do	Pig iron	Northern district, U. S.
963 963	58 83	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S Southern district, U.S.
264	81	do	Pig iron	Northern district, U.S.
965	95	00	Pig iron	Southern district, U.S.
966	101	do	Pig iron	Southern district, U.S.
967 968	103	do	Pig iron	Southern district, U.S., Southern district, U.S.,
969	114	do	Pig irou	Southern district, U.S.
970	40	do	Pig iron	Continent of Europe Continent of Europe
971		do	Pig iron	Continent of Europe
972 973	37	do	Pig iron	Great Britain United States
974	9	do	Muck bar iron	United States
8.0	17	do	Muck bar iron	United States
976 977	26	do	Muck bar iron	United States
977	8 9	do	Finished bar iron	United States
979	ı	do	Steel ingots	United States
980	2	do	Steel ingots	United States
981	_	do	Steel billets	United States
982 983		do	Steel blooms	United States United States
984		do	Mixed iron and steel	United States
985	_	do	Mixed iron and steel	United States
986	-	do	Mixed iron and steel	United States
987 988		do	Mixed iron and steel	United States
989	_	do	Mixed iron and steel	United States
990	-	do	Mixed iron and steel	United States
991	-	do	Mixed iron and steel Mixed iron and steel	United States Continent of Europe
993		do	Mixed iron and steel	Continent of Europe.
994	_	do	Mixed fron and steel	Continent of Europe Continent of Europe
995	-	do	Mixed iron and steel	Continent of Europe
996	96	do	Bituminous coal	United States.
908	107	do	Bituminous coal	United States
999	109	do	Bituminous coal	United States
1000		do	Bituminous coal	United States
1001		do	Bituminous coal	United States
1003	156	do	Bituminous coal	Continent of Europe
1004	-	do	Bituminous coal	Continent of Europe
1005		do	Coke	United States
1006	1	do	Iron ore	United States
1008	12	do	Iron ore	United States
1009	41	do	Iron ore	United States
1010		do	Iron ore	United States United States
1011	43	do	Iron ore	United States
1013	56	do	Iron ore	United States
1014		do	Iron ore	United States
1015		do	Iron ore	United States
1017		do	Iron ore	United States
1018		do	Iron orb	United States



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement/of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	condition for	r period.		had conti	if workmen nuous em- ment.	Mar gin-
days in the period.	or daily rate near- est to average	Different	Days of 1	work done.	Earn	Earnings.		Consequent average earnings	num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
91 91 365 365 365 365 365 365 365 365	\$0.69	12241292555302555045212422123417255225519093553912281341212242217	124 182 656 209 17 613 784 729 334 731 514 2,943 172 244 841 1297 563 716 181 181 182 205 635 187 401 182 1289 915 704 638 2,582 1,686 877 831 1,287 831 1,686 877 831 1,686 877 831 1,686 877 831 1,686 877 878 878 878 878 878 878 878 878	124 91 328 52 177 367 365 167 366 81 294 357 119 94 357 119 93 4357 119 93 4357 119 91 83 149 200 118 136 149 219 36 36 318 7 201 318 318 7 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	\$85 166 976 668 1305 155	\$85 83 488 62 51 690 174 862 334 453 446 750 189 334 189 334 189 770 455 527 218 67 70 455 527 218 87 884 884 885 885 125 885 885 125 885 125 885 125 885 126 127 128 128 128 128 128 128 128 128	1.36 2.00 1.10 1.14 1.01 1.14 1.14 1.14 1.14 1	\$62 83 543 217 1, 095 821 729 863 334 652 471 930 876 641 414 845 675 639 676 516 8310 516 1, 173 423 577 783 376 675 783 812 675 675 675 675 675 675 675 675 675 675	900 900 900 900 900 900 900 900 900 900

Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentator the establishment was obtained in referring from this table to those on production by means of

Mar- gin al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1019 1020 1021	42	Engineer, air compressor Engineers, axle hammer Engineers, blast Engineers, bloom	Iron ors	United States United States Great Britain
1022 1023		Engineers, bloom	Mixed iron and steel Mixed iron and steel	Great Britain
1024		Engineers, blowingdo	Steel ingots	Continent of Europe
1026	10	Engineers, chief	Pig iron Mixed iron and steel	Northern district, U.S. United States
1028	- 6	Engineers, coal crusher. Engineers, condensing.	Mixed iron and steel	United States United States
1030	-	Engineers, condensing	Coke Mixed iron and steel	Great Britain
1031		Engineers, crane	Mixed iron and steel Mixed iron and steel	Great Britain
1033	103	Engineers, crop-end Engineers, dinkey	Mixed fron and steel	Great Britain
1035	100	Engineers, drill	Pig iron	Great Britain
1036 1037		Engineer, drop	Mixed iron and steel Steel bloom	Great Britain United States
1038 1039	2	Engineers, fan	Steel ingots	United States Great Britain
1040		do Engineers, fish plate Engineer, foundery Engineers, furnace	Mixed iron and steel	Great Britain
1041	42	Engineer, foundery	Mixed iron and steel Pig iron	Great Britain Northern district, U.S.
1043	67.		Pig iron	Northern district, U.S. United States
1045	-	Engineers, grinding Engineers, hammer Engineers, hoisting	Steel rails	AND ADDRESS OF THE PARTY OF THE
1046 1047	67	Engineers, hoistingdo	Pig iron	Northern district, U.S. Great Britain
1048	18 26	do	Pig iron	United States
1050		do Engineers, hydraulic	Bituminous coal	United States
1051 1052		Engineers, hydraulicdo	Mixed iron and steel Mixed iron and steel	Great Britain
1053 1054		Engineers, lathe	Mixed iron and steel Mixed iron and steel	Great Britain
1055 1056	32	Engineers, locomotive	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Southern district, U.S. Southern district, U.S.
1057	67	do	Pig iron	Northern district, U.S.
1058 1059	101	do	Pig iron	Southern district, U.S.
1060	8	do	Pig iron Finished bar iron	United States
1061 1062	7	do	Steel ingots	United States United States
1063 1064		do	Steel billets	United States United States
1065	_	do	Steel blooms	United States
1047		do	Mixed iron and steel	United States United States
1068	42	do	Mixed iron and steel Iron ore	Continent of Europe United States
1070		Engineers, machine shop	Mixed from and steel	United States
1071	_	Engineer, mechanical Engineer, mechanical, assistant	Mixed iron and steel Mixed iron and steel	Continent of Europe
1073 1074		Engineers press	Mixed iron and steel	Great Britain Great Britain
1075	_	Engineers, puddling Eugineers, pump	Mixed iron and steel Mixed iron and steel	Great Britain
1077		do	Mixed iron and steel	Great Britain
1078		Engineers, rail mill Engineers, rolls	Mixed iron and steel Mixed iron and steel	Great Britain United States
1080	_	do	Mixed iron and steel	Great Britain
1082		Engineers, sawdo	Mixed iron and steel Mixed iron and steel	Great Britain
1083 1084	_	Engineer, shape hammer Engineer, shear.	Mixed iron and steel Mixed iron and steel	United States Great Britain
1085		Engineer, shop	Mixed iron and steel	Great Britain



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.)

Work-	Actual daily earnings,		Actual c	ondition for		f workmen mous em- ment.	Mar		
days in the period.	or daily rate near est to average	Different	Days of	ork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
265 1688 633 313 313 313 313 313 313 313 313 313	\$1.65 (4) (5) (6) (6) (6) (7) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7	16++881111811181141418111111111111111111	383 (a) 2255 2251 2766 3618 378 3618 378 106 318 107 118 108 115 109 116 108 117 119 119 119 119 119 119 119 119 119	388 (a) 56 53 60 92 361 379 361 318 46 54 118 28 54 260 32 186 64 60 32 186 64 60 176 187 253 214 65 187 214 187 253 218 187 211 187 253 288 135 115 115 115 115 115 115 115 115 115	\$832 404 157 250 1,050 264 1,337 154 65 61 1,337 1,522 70 70 297 622 42 42 1,339 1,321 1,330 364 45 72 72 72 72 42 42 1,330 364 1,337 1,530 364 1,321 1,530 364 1,321 1,530 364 1,321 1,530 364 1,321 1,530	\$632 \$632 \$637 \$35 \$48 \$88 \$250 \$1,030 \$1,030 \$1,037 \$77 \$27 \$27 \$27 \$27 \$27 \$27 \$2	1.05 (a) 4.24 4.38 4.25 3.115 4.25 3.115 1.099 1.002 0.110 1.002 0.110 1.003 1.104 1.105 1	\$602 (a) 377 422 742 71, 011 1, 011 154 154 152 1700 24 28 28 367 237 30 177 16 675 980 426 1433 333 28 28 28 414 1700 685 700 676 1, 108 85 700 676 1, 108 87 676 784 432 236 897 677 81 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 436 897 678 437 638 648 448 637 638 638 648 637 639 638 648 647 637 638 649 649 649 649 649 649 649 649 649 649	101 102 102 102 102 102 102 102 102 103 103 103 103 103 103 103 103 103 103

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of preduction presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
_				
1087	28	Engineers, stationary	Coke	United States
1089	42	do	Iron ore	United States United States
1090		Engineers tipper	Mixed iron and steel	Great Britain
1091		Engineers, tipper	Mixed iron and steel	Great Britain
1092	_	Engineers, ventilator	Mixed iron and steel	Continent of Europe
1093	***	Engineer, winding Engineer and engineers' holper	Mixed iron and steel	Continent of Europe
1094	101 26	Engineers and engineers helper	Pig iron	Southern district, U.S.
1096	20	do	Bituminous coal	United States
1097	58	Engineer and foreman Engineers and laborers	Pig iron	Northern district U.S.
1098	9	Engineers and laborers	Pig iron	Northern district, U.S.
1099	22	do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S.
1100	58	do	Pig iron	Northern district, U.S.
1101 1102	1	do	Steel ingota Mixed iron and steel	United States
1103		do	Mixed iron and steel	United States
1104	1	do	Tron ore	United States
1105	72	Engineers and machinists	Iron ore	United States Northern district, U.S.
1106	9	Engineers and machinists	Pig iron	Northern district, U.S.
1107 1108		do	Steel blooms	United States
1109	46	do	Mixed iron and steel Iron ore	United States
1110	41	Engineers and miners	Iron ore	United States
1111	42	do	Iron ore	United States
1112	1	Engineer and rigger Engineer and roller Engineer and water tender	Steel ingots	United States
1113	200	Engineer and roller	Mixed iron and steel	United States
1114	103	Engineer and water tender	Pig iron	Southern district, U.S Southern district, U.S Southern district, U.S
1116	101	Engineer and wiper Engineers' helpers	Pig iron	Southern district II S
1117	17	do	Muck bar iron	United States
1118	101	Engineers' helper and laborer:	Pig iron	Southern district U.S.
1110	101	Eugineers' helper and teamster	Pig iron	Southern district, U.S.
1120 1121	148	Enginemen	Mixed iron and steel Bituminous coal	Great Britain
1122	170	Enginemen, fan	Bituminous coal	Great Britain
1123	148	Enginemen, hauling	Bituminous coal	Great Britain Dominion of Canada
1124	170	do	Bituminous coal	Great Britain
1125	170	Enginemen, locomotive	Bituminous coal	Great Britain
1126 1127	170	Enginemen, underground	Bituminous coal	Great Britain.
1128	148	Engineman, winding Enginemen's helpers	Bituminous coal	Dominion of Canada Great Britain
1129	2.0	Entrymen	Bituminous coal	United States
1130	_	Entrymen and haulers	Bituminous coal	United States
1131	_	Entrymen and laborers	Bituminous coal	United States
1132	_	Entrymen and miners	Bituminous coal	United States
1133		Entrymen and miners Entryman and timberman Entryman and water boiler	Bituminous coal	United States
1135		Examiner	Mixed iron and steel	Continent of Europe
1136	148	Extra hand	Bituminous cosl	Dominion of Canada
1137		Fagotmakers	Mixed iron and steel	United States. Southern district, U.S
1138	101	Fallmen	Pig iron	Southern district, U.S
1140	109	Fanmen	Bituminous coal	United States
1141	109	Fanman and weighman	Bituminous coal	United States
1142	6	Feeders, coal crusher	Coke	United States
1143	_	Pettiers and slag wheelers	Mixed iron and steel	Great Britain
1144		File cleaner	Pig iron	Great Britain
1146		Filers	Steel rails	Continent of Europe Great Britain
1147		dodo	Mixed from and steel.	Graat Britain
1148	9	Fillers	Pig iron	Northern district U.S
1149	10	do	Pig iron	Northern district, U.S Northern district, U.S
1150	32 .	do	Pig iron	Northern district, U.S Northern district, U.S
1151	41 -	do	Pig iron	Northern district, U.S
1153	42	do	Pig iron	Northern district, U.S Northern district, U.S



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.

Work-	Actual daily earnings,		Actual o	ondition fo	or period.		Condition in the continuous ploys	f workmen nous em- nent.	Mar
ing days in the period.	rate near- est to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num- ber.
	daily earnings.	employés.	Total.	Average.	Total	Average.	employés.	per eti- ployé.	
313 365	\$1.81 1.05	2	277 301	129	\$502 316	\$251 316	0. 89 0. 82	\$567 283	1087 1088
313	1.43	1 4	1, 296	824	. 1, 857	461	4.14	449	1089
4.8	. 69	2	74	37	49	25	1.54	32	1090
58 313	.49	2	94	47	46	23	1. 77 2. 28	26 173	1001
313	. 551	2 2 2 1 1 1	714 264	357 264	395 94	198 94	0.84	iii	1092
184	1.79	ī	109	109	195	195	0. 59	329	1094
313	1. 72	1	317	317	545	545	1.01	538	1095
365 365	1.90	1 !	346 251	346 251	637 740	657 740	0. 95 0. 69	693 1, 076	1096 1007
365	2.95 2.25	1 1	363	362	814	814	0.99	821	1098
365	1.60	1	5	5	8	1 8	0.01	584	10:39
365 313	L. 84	1	179	179	329 176	829	0. 49 0. 37	671	1100
313	1. 51	•	116 122	29 122	198	44 198	0.39	475 508	1102
313	1 1.404	l i	l īī	1 11	16	16	0.04	455	1103
313	1.51	1	76	76	115	115	0. 24	474 554	1104
313 365	1.77	1 1	200 321	200 331	354 953	354 953	0. 64 0. 88	1, 084	1105
230	2.80 1.78	l i	268	288	833	833	1.25	665	1107
313	1.78	2	363	182	646	323	1.16	557	1108
313	2.60	1 1	1, 133 246	283 123	2, 948 301	736 151	3. 63	814 383	1100
313	1, 22) 1, 45	1 1	801	301	1 439	429	0. 79 0. 96	457	1111
313	1.911	111111111111111111111111111111111111111	205	205	293	893	0, 65	600	1113
155	2.00	1		2	-4	ا	0.01	310	1113
365 334	1.82	1 1	313 303	313 303	570 345	570 345	0. 86 0. 91	665 390	1114
184	1.40	16	1, 125	70	1, 577	99	6. 12	258	1116
184 286	1. 75		77	26	136	45	0. 27	505	1117
184 181	1.24 1.124	3 1 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	50 113	50	62 127	62 127	0. 27 0. 61	228 207	1118
156	1.01		850	113 142 382 77	858	143	5.45	157	1120
365	1.20	2	763	382	915	458	2.00 1.60	438	1121
91	1. 21 1. 20	2	153 475	77 238	185 5 69	93 285		110	1122
313	1.44	2	182	238	263	131	1. 52 2. 00	375 131	1123
91	1.161	2	163	91 82	199	95 89	1.80	106	1125
91	1.09	3	163	82	178	89	1.70	99 391	1126
313 91	1.25	1 2	\$30 154	830 77	412 67	412 34	1.05 1.70	40	1127
813	(4)	88	(a)	(s)	4, 525	Ei !	(a)	(6)	1129
813	1.47	5	261	52	384	1 77 j	0.83	461	1130
313 313	(6) 1. 874	6 3	(a) 162	(a) 54	839 304	138 101	(a) 0, 52	(a) 587	1131
313	(s)	i	(a)	(4)	162	162	(6)	(4)	1133
318	.67	1	62	62	1 42	42	0,20	212	1134
92 313	1.00	1 1	93 252	92 253	39 252	25?	1. 00 0. 01	39 313	1135 1136
318	2.03	2	- 65	33	132	66	0. 01	636	1137
184	1. 25	17	551	33 32	685	40	0. 21 2. 99	2.9	1138
313	1.50	3 1	310	103 173	470	157	0.99	475	1139
313	1.68	1	173 194	194	263 326	263 326	0, 55 0, 62	476 526	1140 1141
92	1.00	1 2	43 320	22	43	22	0. 47	92	1143
156	. 90	2	320	160	288	144	2,05	140	1143
135 78	1.03	32	135 1, 990	135 62	139 1, 014	139 32	1. 00 25. 51	139 40	1144
48	(a)	6	(6)	(a)	203	39	(6)	(a)	1146
5.3	.61	8	407	51	247	31	7.68	32	1147
365 365	1. 92 1. 58	1	265 7, 219	265 77	509 11, 398	509 121	0.73	701 576	1148 1149
365	1, 524	94. 29	4, 274	147	6, 953	240	19. 78 11. 70	594	1150
167	1.50	. 10	1,441	144	2.162	216	8.63	251	1131
365 365	1.50 1.35	2 25	236 4, 239	118	343	172 230	0.65	530	1152
181	1.41	25 36	3, 357	170	5, 742 4, 742	132	11. 61 18. 55	494 25 4	1158 1154
. 101	. 4.413	, 20	. 5,557	3	, 4,4	, 200	. 10.30	200	1 1100

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

[Each line abows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- sl num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1155	67 95	Fillers—concluded	Pig iron	Northern district, U. S. Southern district, U. S. Southern district, U. S.
1157 1158	103 109	do	Pig iron	Southern district, U.S.
1159 1160 1161	36 37	do	Pig iron Pig iron	Great Britain
162 163	=	do	Mixed iron and steel Mixed iron and steel	United States Continent of Europe Continent of Europe
1164	72	do	Mixed iron and steel Iron ore	United States
1166 1167	22	do	Pig iron	United States Northern district, U. S. Northern district, U. S.
1168 1169	42 55	do	Pig iron	Northern district, U. S. Northern district, U. S.
1169 1170 1171	84 95	do	Pig iron	Northern district, U. S. Northern district, U. S. Northern district, U. S. Southern district, U. S.
1172 1173	109 114	da	Pig iron	Southern district, U.S Southern district, U.S
1174 1175	36	do Fillers, cinder Fillers, coke	Pig iron	Great Britain
1176	58	Fillers, coke	Pig iron	Northern district, U.S Northern district, U.S
1177 1178	83	do	Pig iron	Great Britain
1179 1180	37	do	Pig iron	Great Britain
1181 1182 1183	58	Fillers, cupola Fillers, lime	Steel ingota Pig iron	Northern district, U.S
1184	36	Fillers, mine	Pig iron	Great Britain
1185 1186	58 83	Fillers, oredo	Pig iron	Great Britain. Northern district, U.S Northern district, U.S
1187 1188	95	Fillers, stockhouse	Pig iron	Southern district U.S.
1189 1190	37 10	Fillers, stove	Pig iron	Great Britain Northern district, U.S
1191 1192	22 32	do	Pig iron	Vorthorn district IT &
1193 1194	41	do	Pig iron	Northern district, U.S
1195	49	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S Northern district, U.S
$\frac{1196}{1197}$	55 58	do	Pig iron	Northern district, U.S Northern district, U.S
1198	83 84	do	Pig iron	Northern district, U.S Northern district, U.S
1200 1201	95	do	Pig iron	Southern district, U.S.,
1202 1203	103	do	Pig iron Pig iron	Southern district, U.S.,
1204 1205	114	dodo	Pig iron	Southern district, U.S Southern district, U.S Continent of Europe
1206 1207	9	fillers and helpers	Pig iron	Continent of Europe
1208	103	Filler and iron handler	Pig iron	Southern district, U.S.
1209 1210	10	Fillers and iron men	Pig iron	Continent of Europe Continent of Europe Northern district, U.S Southern district, U.S Northern district, U.S Northern district, U.S
1211 1212	10	Filler and keeper. Fillers and keepers' helpers	Pig iron	Northern district, U.S
1213	95	Fillers and laborers	Pig iron	Northern district, U.S Northern district, U.S Southern district, U.S Northern district, U.S
1215	10	do	Pig iron	Northern district U.S.
12:7 1218	42	do	Pig iron	Northern district, U.S., Northern district, U.S., Northern district, U.S.,
1219	67 84	do	Pig iron	Northern district, U.S Northern district, U.S
1220	101	do	Pig iron	Southern district, U.S., Southern district, U.S., Southern district, U.S., United States
1222	103	do	Pig iron	United States



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	condition fo	r period.		had conti	if workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of v	work done.	Earnings.		Necessary	Consequent average earnings	gin- al num- ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
265 334 365 91 313 313 313 313 313 313 313 313 313	\$1.61\$ 1.14 1.084 1.18 1.14 1.084 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.18 1.16 1.16	28 3 119 5 6 6 125 225 116 6 8 1 125 125 125 125 125 125 125 125 125 1	\$, 915 3,85 6,947 4,689 2,405 3,028 6,226 6,236 3,938 2,475 4,599 3,281 5,081	211 128 58 113 82 172 69 200 56 112 206 149 85 69 127 77 77 77 77 135 130 130 135 78 267 77 135 130 135 287 79 135 188 237 165 801 229 1213 135 251 73 58 118 354 114 38 554 1158 550 189 290 184 559 290 184 559 184	\$9, 539 \$24 \$23 \$23 \$23 \$23 \$23 \$23 \$23 \$23 \$23 \$23	#341 175 699 1299 699 888 74 261 34 201 300 400 202 201 110 100 202 201 111 101 10	16. 20 1. 15 19. 02 1. 155 5. 4. 12 7. 32 7. 6. 44 8. 7. 08 8. 7. 08 10. 94 11. 5. 55 0. 61 7. 30 10. 94 11. 5. 55 11. 93 11. 02 11. 93	\$589 455 432 415 655 80 510 46 171 545 545 545 546 547 111 577 65 561 111 577 561 111 577 68 199 562 719 562 719 563 719 718 718 719 719 719 719 719 719 719 719	115.51.55.11

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[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1224		Filler and masons' helper	Mixed iron and steel	United States
1225	9	Filler and metal breakerFiller and metal carrier	Pig iron	Northern district, U.S.
1226	55	Filler and metal carrier	Plg iron	United States. Northern district, U. S. Northern district, U. S. Northern district, U. S. Northern district, U. S. Northern district, U. S. Southern district, U. S. Northern district, U. S. Northern district, U. S.
1999	32	Fillers and ore breakers	Pig iron	Northern district II S
1990	55	Filler and scraper	Pig iron	Northern district, U.S.
1230	103	Filler and stocker	Pig iron	Southern district, U.S.
1231	109	Filler and sweeper	Pig iron	Southern district, U.S.
1232 1233	101	Fillers' helpers	Pig iron	Northern district, U.S.
1234	10	fillers' helper and laborer Fillers' helper and stock preparer	Pig iron	Southern district, U.S. Northern district, U.S.
1235	10	Fillers' helper and stock preparer	Pig iron	Marthurn district II W
1236	_	Finishersdo	Mixed iron and steel	United States Continent of Europe Continent of Europe
1237 1238	_	do	Mixed iron and steel	Continent of Europe
1230		do	Mixed iron and steel	Continent of Europe
1240		Finishers' helper	Mixed fron and steel	Continent of Europe
1241	96	Fire bosses	Bituminous coal	United States
1242	107	do	Bituminous coal	United States United States
1243	10	Firemendo	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S.
1245	49	do	Pig iron	Northern district II S
1246	58	do	Pig iron	Northern district, U.S.
1247	83	do	Pig fron	Northern district, U.S.
1248 1249	95	do	Pig iron	Southern district, U.S.
1250	101	do	Pig iron	Northern district, U.S. Southern district, U.S. Southern district, U.S. Southern district, U.S. Southern district, U.S.
1251	37	do	Pig iron	Great Britain
1252	9	do	Muck bar iron	United States
1253	17	do	Muck bar iron	United States
1254	20	do	Muck bar iron Finished bar iron	United States
1256	9	do	Finished bar iron	United States
1257	ĩ	do	Steel ingots	United States
1258	_	do	Steel billets	United States
1259 1260	-	do	Steel blooms	United States
1261		do	Steel blooms	United States
1262		do	Mixed iron and steel	United States
1263	_	do	Mixed fron and steel	United States
1264	_	do	Mixed iron and steel	United States
1265 1266		do	Mixed iron and steel Mixed iron and steel	United States
1267		do	Mixed iron and steel	Continent of Europe
1268	18	do	Bituminous coal	United States
1269	_	do	Bituminous coal	United States
1271	148	do	Bituminous coal	United States
1272	156	do	Bituminous coal	Continent of Europe
1273	-	do	Bitum inous coal	Continent of Europe
1274	170	do	Bituminous coal	Great Britain
1275 1276	1	do	Coke	Continent of Europe
1277	12	do	Iron ore	United States
1278	42	do	Iron ore	United States
1279	45	do	Iron ore	United States
1280	69	do	Iron ore	United States
1283	72	do	Iron ore	United States.
1233	80	do	Iron ore	United States
1284	-	Firemen, axle hammer	Mixed fron and steel	United States
1285	_	Firemen, Doller	Mixed iron and steel	United States
1287		do	Mixed fron and steel	United States
12×8	_	do	Mixed from and steel Mixed from and steel	Continent of Europe
1289	_	do	Mixed iron and steel.	Great Britain
1230		Firemen, furnace	Mixed iron and steel	United States
1:291		de	Mixed iron and steel	Great Britain



one establishment cannot be compared with these for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily carnings,		Actual	condition fo	r period.		had conti	f workmen mous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of v	vork done.	Earn	ings.	Neccesary	Consequent average earnings	gin- al num
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	ber.
313 365 181 365 365 365 365 365 365 365 365 365 365	\$1.46\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	111511112611259311121381418886781319174426722111259281186342128886722112	28 226 147 7772 1111 477 69 132 272 777 314 80 812 230 292 292 80 1150 123 292 814 150 123 291 864 144 254 893 114 414 254 893 114 414 254 814 1, 381 1, 371 1, 554 1, 551	28 226 147 154 111 47 69 132 91 118 314 80 206 286 59 281 181 329 292 292 292 103 324 235 277 92 170 105 156 138 138 148 156 138 148 156 156 170 170 170 170 170 170 170 170	\$41 482 482 483 483 484 482 483 483 485 485 485 485 485 485 485 485	\$41, 482 243 243 243 243 243 243 243 243 243 24	0.09 0.62 0.211 0.26 0.212 0.26 0.275 0.222 0.275 0.282 0.282 0.283	\$458 778 299 609 566 281 407 3137 271 584 598 1,050 135 455 183 833 656 626 626 71 7150 7150 7150 7150 7150 7150 7150 7	122 122 122 122 122 122 122 122 122 122

e Paid by the quantity. The daily rate of pay and days of work done cannot be given.

(Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cest of production presentator the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Ea- tab- liah- ment num- ber.	Occupation.	Industry.	Locality.
1292		Firemen, gashouse Firemen, link welders Firemen, locomotive	Mixed iron and steel	United States
1293	32	Firemen locomotive	Mixed iron and steel Pig iron	United States. Northern district, U.S.
1295	42	do	Pig iron	Northern district U.S.
1296	_	do	Mixed iron and steel	United States
1208	43	do	Mixed iron and steel Iron ore	Great Britain United States
1299		Fireman, shape hammer	Mixed iron and ateal.	United States
1300	-	Fireman and firemen's helper Fireman and foreman	Steel blooms	United States
1301 1302		Fireman and booker-up	Mixed iron and steel Mixed iron and steel	United States United States
1303	32 -	Fireman and laborers	Pig iron	Northern district, U. S.
1304	1	do	Steel ingots	United States
1305 1306		do	Steel blooms	United States United States
1307	_	do	Mixed iron and steel Mixed iron and steel	United States
1308	-	do	Mixed iron and steel	United States
1309	72	Fireman and lander	Mixed iron and steel Iron ore	United States United States
1311	_	Firemen and miners	Bituminous coal	United States
1312	41	do	Iron ore	United States
1313	69	Fireman and pumpman	Iron ore	United States
1315		Fireman and shearman	Mixed iron and steel	United States
1316	1	Firemen and stockers	Steel ingots	United States
1317 1318	1	Fireman and vesselman	Mixed iron and steel	United States
1319	26	Fireman and watchman	Bituminous coal	United States
1320	-	Firemen and water tenders	Mixed iron and steel	United States
1321	58	Firemen's helpers	Pig iron	United States
1323	36	Fitters	Pig iron	Great Britain
1324	37	do	Pig iron	Great Britain
1325 1326		do	Mixed iron and steel Mixed iron and steel	Great Britain
1327	_	do	Mixed iron and steel	Great Britain
1328	36	Fitters' helpers	Pig iron Mixed iron and steel	Great Britain
1329 1330	17	Fix grinders	Muck bar iron	Great Britain
1331	58	Flagman and storekeeper	Pig iron	Northern district, U. S.
1332	58	Flue cleaner	Pig iron	Northern district, U. S Northern district, U. S
1333 1334	9	Foremen.	Mixed iron and steel Pig iron	Great Britain
1335	22	do	Pig iron	Northern district, U. S.
1336	32	do	Pig iron	Northern district, U. S.
1337	41	do	Pig iron	Northern district, U. S Northern district, U. S
1339	49	do	Pig iron	Northern district, U. S
1340 1341	55 58	do	Pig iron	Northern district, U. S.
1342	67	do	Pig iron	Northern district, U. S Northern district, U. S
1343	95	do	Pig iron	Southern district, U. S Southern district, U. S
1344	101	do	Pig iron	Southern district, U. S
1345 1346	103	do	Pig iron	Southern district, U. S Southern district, U. S
1847	40	do	Pig iron	Southern district, U. S
1348	114	do	Pig iron	Continent of Europe Continent of Europe
1350	86	do	Pig fron	Great Britain
1351	37	do	Pig iron	Great Britain
1352 1353	7	do	Muck bar iron	United States United States
1354	5	do	Steel ingots	United States
1355	7	do	Steel ingota	United States
1356		do	Steel ingots	Continent of Europel
1358		do	Mixed iron and steel	United States
1359	_	40	Mixed iron and steel	United States

Work-	Actual daily earnings,		Actual	ondition fo	r period.		Condition i	quous em-	Mar
days in the period.	or daily rate near- est to average	Different	Days of	rork done.	Earn	ings.	Necessary	Consequent average	gin- al num-
portoca	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	ber.
313 168 313 313 313 313 313 313 313 31	#1.5524	4555243111111111111111111111111111111111	6, 327 (a) 520 500 509 505 5298 1522 177 114 293 477 214 200 677 220 677 678 678 679 679 679 679 679 679 679 679 679 679	141 (a) 104 350 142 188 298 152 117 293 47 114 2 62 210 234 156 (a) 232 234 158 110 29 85 110 28 301 328 270 39 85 102 254 46 54 219 317 60 254 364 364 360 169 37 254 386 386 386 386 386 386 386 386 386 386	\$8, 545 \$1, 534 \$1, 534 \$1, 534 \$1, 534 \$1, 534 \$1, 193 \$2, 193 \$1, 103 \$2, 193 \$2, 193 \$2, 193 \$3, 193 \$3, 193 \$3, 193 \$3, 193 \$3, 193 \$3, 193 \$3, 193 \$3, 193 \$4, 193 \$3, 193 \$4,	\$190 107 167 167 168 447 294 168 447 294 168 - 75 169 215 111 292 148 292 148 292 148 292 148 292 148 292 148 292 148 292 148 271 285 377 702 281 271 288 277 702 288 271 288 287 270 288 271 288 271 288 287 270 288 271 288 287 270 270 270 270 270 270 270 270 270 27	20. 21 (a) 1. 822 (b) 1. 822 0. 955 0. 955	\$423 (a) 502 548 477 470 3255 327 607 470 395 395 475 475 475 475 475 475 475 475 475 47	1299 1299 1299 1299 1299 1299 1300 1300 1300 1301 1301 1301 1311 131

e Paid the by quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentative the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1360		Foremen—concluded	Mixed from and steel	Continent of Europe
1361	_	do	Mixed iron and ateel	Continent of Europe
1362 1363		do	Mixed iron and steel Mixed iron and steel	Continent of Europe Great Britain
1364 1365	109	do	Bituminous coal	United States
1366	156	do	Bituminous coal	United States Continent of Europe
1367	6	do	Coke	United States
1366 1369	13	do	Coke	United States
1370	23	do	Coke	United States
1371 1372	28 29	do	Coke	United States United States
1373	42	do	Iron ore	United States
1374	45 56	dodo	Iron ore	United States
1376	59	do	Iron ore	United States
1377	61	do	Iron ore	United States
1378 1379	80	dodo	Iron ore	Continent of Europe Continent of Europe
1380	_	Foremen, assistant	Mixed iron and steel	Great Britain
1381 1382	13	do	Coke	United States
1383	23	do	Coke	United States
1384 1385	28	Foremen, blacksmiths	Mixed iron and steel	United States
1386			Mixed iron and steel	United States
1387	_	do	Mixed iron and steel Mixed iron and steel	Great Britain
1388 1389		foremen, boiler Foremen, bottom builders	Mixed iron and steel	United States
1390	_	Foremen, bottom builders	Mixed iron and steel	Continent of Europe
1391 1392	29	Foreman, bricklayers Foreman, bundlers and stock takers	Mixed iron and steel Finished bar iron	Great Britain
1393	_	Foremen carpenters	Mixed iron and steel	Continent of Europe
1394	42 72	do	Iron ore	United States
1396		Foreman, chippers	Steel billets	United States
1397 1398	1	Foreman, chippers Foremen, coke oven Foremen, converter	Mixed from and steel	United States
1399	- 1	Foremen, drillers	Steel ingots	Continent of Europe
1400	-	Foremen, drillers	Mixed iron and steel Mixed iron and steel	Great Britain
1401		Foremen drop	Steel blooms	United States
1403		Foremen, drop	Steel blooms	United States
1404	36	Foremen, engineers	Pig iron	Great Britain
1406	12	Foreman, fillers	Iron ore	United States
1407	37	Foramen filters	Mixed iron and steel Pig iron	Continent of Europe Great Britain
1409	01	do	Mixed iron and steel	Great Britain
1410	-	Foremen, gasbouse	Mixed iron and steel	Great Britain United States
1411		do	Mixed iron and steel	United States
1413	_	Foremen, haulers	Mixed from and steel	Great Britain
1414		do	Mixed from and steel	Great Britain
1416	_	do	Bituminous coal	United States
1417	22	Foremen, heaters	Pig iron	Northern district, U.S.
1419	1	Foremen, laborers	Steel ingots	United States. Northern district, II.S.,
14:0	10	Foremen, laborersdodo	Pig iron	Northern district, U.S., Northern district, U.S.,
1421	55	do	Pig iron	Great Britain
1423	1	dodo	Steel ingota	United States
1424		100	Steel billets	United States
1426	-	do	Steel blooms	United States
1427	_	do	Steel biooms	Continent of Europe



Work-	Actual daily earnings,		Actual	ondition for	r period.		Condition i	nuous em-	Mar
days in the eriod.	or daily rate near- est to average	Different	Days of v	vork done.	Earn	inga.	Necessary	Consequent average earnings	al num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
313 92	\$1.18 2.39} .89	7	411 313 276	313 69	\$486 750 246	869 750 62	5.34 1.00 - 3.00	\$91 750 82	136 136 136
53	1.46	i	48	48	70	70	0.91	77	130
313	3, 10	1	313	313	970	970	1.00	970	136
313	3.10	1 1 1	313 88	313 88	970 54	970	1.14	970 47	136
92	2.98	2	95	48	283	142	1.03	274	136
313	3, 26 2, 49	1	313 313	313	1,020	1, 020 780	1.00	1,020	13
313	2.141	1 1	314	314	780 673	673	1.00	671	13
313	3. 83	1	313	313	1, 200	1,200	1.00	1,200	. 13
365	2.00 1.854	10	2, 821	364 282	728 5, 232	728 523	9.01	730 581	13
313	2.30	1	313	313	720	720	1.00	720	13
313	. 1.50	2	306	153	459	230	0.98	470	13
313 155	1.401	3	444 154	148	624 231	208 231	1.42	440 233	13
313	. 84	î	117	117	98	98	0.37	262	13
158	. 95	2	300	150	286	143	1.90 0.91	151	13
313	2.32	i	301	301	699	699	0.96	43 727	13
313	2. 25	2	301	152	684	342	0.97	704	13
313	1.50 1.50	1	246 219	246 219	369	369 342	0.70	470	13
313	3, 45	î	302	302	1, 042	1,042	0.96	1,080	13
168	5,00	1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	168	168	840	840	1.00	840	13
48 53	1.34	1	48 48	48	64 56	56	0.91	62	13
313	2,00	2 2	, 448	224	892	445	1.43	623	13
313 313	4.314		458 313	313	361 1,350	1,850	1.56 1.00	1, 350	13
99	1.94	1 1	99	99	193	193	1.00	193	13
313	. 87	1	374	374	326	326	1.19	273	13
313	2.75	l i	287 311	287 311	789 777	789 777	0,92	860 7-2	13
202	3. 89	1 1	187	187	727	727	0, 93	785	13
313	2.75 4.73	1 2	290 732	290 366	3, 461	1,731	0.93 2.01	1,726	13
313	531	1 1	266	266	142	142	0.85	167	13
48	2.43	1	48	48	117	117	1,00	117	14
53 230	1.09	1 2	48 191	48 96	53 340	53 170	0, 91 0, 83	409	14
220	1.60	ī	180	180	284	284	0.78	363	14
91 53	1. 215 2. 845	1	91 48	91	111	111	1.00 0.01	111	14
313	2.49	i	313	313	780	780	1.00	7:0	14
313	.563	1 1 1 1 1 1 1	175	175	99	99	0,56	177 190	14
78 48	2.434 1.824	1 1	78 60	78 60	190 110	190 110	1.00 1.25	88	14
53	1. 21	1	48	48	58	53	0.91	64	14
365 365	2.00	1 2 2	700	247 355	1,773	491 887	1.35	730 913	14
53	. 85	1	129	65	100	55	2.43	45	14
48	1.004	1	48	48	53	53	1.00	53	14
313	2.25	1	48 235	235	39 522	522	0, 91	605 605	14
78	1.74	2	158	79	275	138	2, 0.1	136	14
365	2.50 1.914	1	364 456	364 228	910 874	910 437	1, 00	913	14
305	2, 309	ā	869	290	2,048	6×3	2, 39	860	14
181	2,00	1 1 2 1 2 3 1 2 2 3 2 3	1-0	180	357	357	0.99	339	14
135 365	1. 134 3. 104	2	270	185	307	154	2.00 0.32	1, 132	14
78	. 73		130	43	95	32	1.67	57	14
202	3.81		182	182	693	693	0.90	769	14
144 251	1.85 2.65	1 1	146 308	146 308	269 815	269 815	1.01	2115 664	14
78	. 504	2	114	57	68	34	1.46	47	14

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentafor the establishment was obtained. In referring from this table to these on production by means of

	0.3			The beautiful to the second
Mar-	Es-	or to		200
gin-	tab-		and the same	
al	ment	Occupation.	Industry.	Locality.
num-	num-			327.773
ber.	ber.			1
1429		Foremen, laborers—concludeddo	Mixed iron and steel Mixed iron and steel	United States
1431	-	do	Mixed iron and steel	United States
1432		do	Mixed iron and steel	Continent of Europe
1434	1	do	Mixed fron and steel.	Continent of Europe
1435	-	do	Mixed iron and steel Mixed iron and steel Mixed iron and steel	Continent of Europe
1436	18	dodo	Mixed iron and steel	Great Britain
1438	10	do	Bituminous coal	United States
1439		Foreman, laborers, assistant	Steel blooms	United States
1440	10	Foreman, locksmiths	Mixed iron and steel	Continent of Europe
1441	10	Foremen, machinets	Pig iron	Northern district U.S Continent of Europe
1443	_	do	Mixed from and steel	United States
1444	-	do	Mixed iron and steel	United States
1446	37	Foremen, masons	Mixed iron and steel Pig iron	Great Britain
1447	100	do	Mixed iron and steel	Continent of Europe
1448	-	do	Mixed from and steel	Continent of Europe
1450		do	Mixed iron and steel Mixed iron and steel	Great Britain
1451	29	do	Finished bar iron	Great Britain
1452	-	40	Steel billets	United States
1453		do	Steel rails	Continent of Europe
1455		do	Mixed from and steel	United States
1456	_	do	Mixed iron and steel	Great Britain
1457	42	Foremen, miners	Mixed iron and steel	Great Britain
1459	46	do	Iron ore	United States United States
1460	1	Foreman, mixers	Steel ingota	United States
1461	36	Foreman, moulders Foreman, navvies	Mixed iron and steel	Great Britain
1463	2	Foremen, pitmen	Pig iron Steel ingota	United States
1464	_	Foremen, plate cutters	Mixed iron and steel	Continent of Europe
1465	36	Foremen, puddlersdo	Muck bar iron	Great Britain
1467		do	Mixed from and steel	United States Continent of Europe
1468	-	do	Mixed fron and steel	Continent of Europe
1469	-	do	Mixed iron and steel	Continent of Europe
1471	36	Foremen, rail bank	Mixed iron and steel Mixed iron and steel	Great Britain
1472	-	Foremen, repairers	Mixed iron and steel	Great Britain
1473		Foremen, repairers	Mixed iron and steel	Continent of Europe
1475	29	Foremen, roll turners	Finished bar iron	Continent of Europe Great Britain
1476	-	40	Mixed iron and steel	Great Britain
1477		Foremen, rollers	Mixed iron and steel Steel rails	Great Britain
1479	-	do	Steel rails	Continent of Europe Continent of Europe
1480	_	do	Mixed iron and steel	Continent of Europe
1481		Foreman, scrap pilers Foreman, scull breakers	Mixed from and steel Steel blooms	United States
1483	-	Foreman, shear room	Mixed iron and steel	United States
1484	1	Foreman, stockers	Steel ingota	United States
1485	103	Foremen, track	Mixed iron and steel	Great Britain
1487		do	Pig iron	United States
1488	69	Foremen, transportation	Iron ore	United States
1489		roremen, transportation	Mixed iron and steel	Continent of Europe
1491		Foremen, warehouse	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe
1402	_	Foreman works	Mixed iron and steel	Continent of Europe
1494		Foreman, works, assistant	Mixed iron and steel	Continent of Europe
1495	_	Foreman and heater	Mixed fron and steel Mixed fron and steel	United States
1496	22	Foreman and laborer	Pig iron	Northern district, U.S.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.

Work-	Actual daily earnings,		Actual	ondition fo	r period.		had conti	if workmen muona em- ment.	Ma
days in the period.	or daily rate near- est to average	Different employés.	Days of v	vork done.	Earn	ings.	Necessary employés.	Consequent average earnings	gin al nun ber
	daily earnings.	employes.	Total.	Average.	Total.	Average.	emproyes	ployé.	
313 313 313 313 313 313 313 313 313 313	\$2.75 2.258 	213115211611111111111111112122511111441422211111111	633 318 487 72 343 448 690 76 171 986 146 229 365 166 177 175 302 77 175 302 77 175 302 77 184 48 48 48 99 11 1,154 257 48 911 1,154 257 48 911 1,154 202 1,303 206 286 287 629 48 48 48 48 48 48 48 48 48 48 48 48 48	317 318 162 343 343 350 76 171 164 329 365 106 177 78 313 141 48 48 48 99 196 231 257 48 (a) 231 257 48 91 101 327 92 86 72 313 92 84 48 80 92 48 80 92 80 81 81 81 81 81 81 81 81 81 81	\$1, 740 716 769 769 769 769 769 769 769 769 769 76	#\$70 716 256 329 249 70 70 259 245 243 1,700 143 618 450 231 231 1,700 143 618 450 231 1,700 143 618 450 231 1,700 144 531 237 2,210 174 58 90 174 1,170 70 494 152 63 70 68 133 145 1,170 168 133 145 264 1,270 272 294 1,270 294 1,276 571 1,276 571 1,276 571 1,278	2.03 1.02 1.55 0.94 1.105 1.105 1.05 1.05 1.05 1.05 1.05 1.	\$860 705 494 90 300 57 223 49 466 302 250 1,700 123 587 450 239 209 209 209 209 209 209 209 209 209 20	144 144 144 144 144 144 144 144 144 144

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentator the establishment was obtained. In referring from this table to these on production by means of

far- gin- al num- ber.	tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1497	42	Foremen and miners	Iron ore	United States
1498 1499 1500	59 10	Forge cleaners	Pig iron	United States
1501 1502	36	For go aweepers and roll scalers Forgers	Muck bar iron Steel billets	Great Britain United States
1503 1504 1505	19 23	Forkersdodo	Coke	Great Britain
1506 1507 1508	10	Founders	Pig iron	Northern district, U.S. Southern district, U.S. Southern district, U.S.
1509 1510	101	do do Purnace helpers	Mixed iron and steel	Continent of Europe
1511 1512 1513	=	Gaggers	Steel billets	United States Great Britain Great Britain
1514	156	Gaggers and laborers	Mixed iron and steel Mixed iron and steel Mixed iron and steel	Great Britain
1516 1517 1518	156	Gallery cutters	Bituminous coal Bituminous coal Bituminous coal	Continent of Europe Continent of Europe Continent of Europe
1519 1520 1521	156 156 156	Gallery repairers	Bituminous coal Bituminous coal Bituminous coal	Continent of Europe Continent of Europe Continent of Europe Continent of Europe
1522 1523		Gas producersdodo	Mixed iron and steel Mixed iron and steel	Great Britain
1524 1525 1526	=	Gas tender	Mixed iron and steel Mixed iron and steel Mixed iron and steel	Great Britain Great Britain Great Britain
1527 1528 1529	5 7	Gasnitters' helpez Gasmakersdo	Mixed iron and steel Steel ingots Steel ingots	United States
1530 1531 1532		Gasmaker and hammermanGasmaker and neaters' helper	Mixed iron and steel Mixed iron and steel Mixed iron and steel	United States United States United States
1533 1534	5	Gasmakers' helpers	Mixed iron and steel	United States United States
1535 1536 1537	7 7 7	Gasmakers' helper and ladle liner Gasmakers' helper and pit cleauer	Steel ingots Steel ingots	United States United States United States
1538 1539 1540	7	Gasmakers' helper and stopper setter.	Steel ingots	United States
1541		Gasman's helper	Mixed iron and steel	United States
1543 1544 1545	_	do	Mixed iron and steel Mixed iron and steel Mixed iron and steel	United States United States Great Britain
1546 1547 1548	109	Graders	Mixed iron and steel Pig iron	Southern district, U.S.
1549	7	Grader, track Greasers	Pig iron Bituminous coal Steel ingots	United States
1551 1553 1553		do	Steel brooms	United States
1554 1553 -1536	-	lo	Mixed from and steel Mixed from and steel Mixed from and steel	Continent of Europe Continent of Europe Great Britain
155	170	do	Bituminous coal	United States Great Britain Continent of Europe
1556 1560		Grindersdododo	Mixed iron and steel Mixed iron and steel	Great Britain
1560 1560 1560	7	do Grinders' helpers Grinders' helper and ladle racker Grinders' helper and metal wheeler	Steel ingots Steel ingots Steel ingots Muck bar iron	United States

Work-	Actual daily earnings,		Actual o	condition for	period.		Condition had continuous ploys	if workmen nuous em- ment.	Ма
days in the eriod.	or daily rate near- est to average	Different	Days of v	vork done.	Earn	ings.	Necessary	Consequent average earnings	gin al nun ber
	daily earnings.	employés.	Total	Average.	Total.	Average.	employés.	per em- ployé.	
313	\$1.47	1 1 1	284	284	\$418	\$418	0.91	\$461	14
313	1.33	1	259 189	259 189	345 351	345 351	0.83	417 678	14
313	1. 25	3	844	281	1,088	363	0.52 2.70	403	15
99	.74	1	183	92	135	68	1.85	73	15
202	2.00	2 9	3	2	6	3	0.01	404	15
156 313	1.741 1.46	16	1,014	113	1, 767	196	6.49	272	15
313	1.00	29	2, 648	91	1, 031 2, 651	91	2, 26 8, 46	456 313	15 15
365	. 681	3	1,007	336	690	230	2. 76	250	15
365	6.78	1	59	59	400	400	0.16	2, 475	15
154	3.913	2	366	183	1, 433	717	1.99	720	15
365	1.084	1	366	366	1, 650	1,650	1.00	1, 645	15
202	2.25	2	323	323	3:0	350	1.03	239 455	15 15
48	(a)	12	(a)	(a)	371	31	(a)	(a)	15
53	(a)	12	(a)	(a)	587	49	(a)	(a)	15
48	. 53 (a)	2	79	40	42	21	1.65	26	15 15
53	1.01	78	(a) 3, 394	(a)	3, 427	97 44	(a) 44.08	(a) 78	15
52	. 95	6	285	48	271	45	5, 48	49	15
77	1.00	1	74	74	271 74	74	0.96	77	15
77	. 50g	64 40	2, 854 1, 143	45	1, 448	23	37. 06	39	15
77 77 77 77	.944	1	1, 143	29	1, 043	26 18	14. 84 0. 25	70 73	15 15
156	1,09	1 2	143	72	157	79	0.92	171	15
53	. 63	16	960	60	615	38	18. 11	34	15
53 48	. 71	2	119	60	50	30	2. 25	26	15
156	.074	1 1 1	180	180	178	34 178	1.00	34 154	15
156	. 81	1	166	166	140	140	1.06	132	15
132	2, 50	2	299	150	74K	374	2.27 1.91	330	. 16
230 155	2.00 1.604	10	440 656	220 70	872	436	1.91	456	15
155	3, 03	1	31	31	1, 118	112 94	4.49 0.20	249 470	15
155	2, 405	1 1	52	52	125	125	0.34	373	16
155	1.384	1	13	13	18	18	0.08	215 213	15
132	1.60	4	305 395	76	493	123	2, 31	213	15
230	1, 90	ı	40	132	654 76	218 76	1. 72 0, 17	381 437	15
230	1. 731	1	38	38	66	66	0.17	309	15
230	1.82	1	74	74	135	135	0. 32	420	1.5
230	2.00	1 1	15 14	15	40 28	40 28	0.07	613	15
230	2.00 1.65	1 1 1 1 1 1 1 1 2 4	13	13	21	28	0.06	460 372	15
313	1.40	4	1, 159	290	1,635	409	3, 70	442	15
155 313	1.50	1	176 691	176 230	264	264	1.14	233	15
48	. 361	1 4	146	37	697 54	232 14	2, 21 3, 04	316	15
53	.404	2	. 81	41	33	17	1.53	18 22	15
365	1. 25	1	296	296	371	371	0.81	457	15
365	1.10 1.50	2	223 67	112	245 101	123	0.65	401	15
230	1. 85	1 1	538	135	993	101 248	0, 21 2, 34	472 425	15
78	. 534	7	433	62	231	33	5, 56	42	15
132	1, 80	2	303	152	552	276	2.30	240	15
168	1.47	2	53 274	27	78 199	199	0.32	247	15
213	364	1 2 1 4 7 2 2 2 1 9	1, 422	158	517	199	0. 88 4. 54	227 114	15
48	. 53	5	267	53	141	28	5, 57	25	15
313	.814	2 2	230	115	187	94	0,73	254	15
91 27	1. 101	6	153 104	77	169	85	1.68	101	15
48	(a)	1	(a)	(a) 17	71 48	12	3, 85 (a)	(a) 18	15
53	(a)	11	(a)	(a)	448	41	(a)	(a)	15
230	1.65	6	524	87	859	143	2. 28	377	15
230	1.71 2.364	1	222 180	222 180	380 426	380 426	0. 97	394	15
99	. 75	1 2	280	140	209	105	0.78 2.83	544 74	15

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(Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of predaction presents for the establishment was obtained. In referring from this table to those on predaction by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
_			2.5	2
1566 1567	170	GuardsGuides	Steel billets	Great BritainUnited States
1568 1569		Guides and tongsmen Guide and transmitter	Steel billets	United States
1570 1571	84	Guillotine tenders	Mixed iron and steel Pig iron	Great Britain Northern district, U. S.
1572	-	do	Alixed from and steel	Continent of Europe
1573 1574		Hammer driversdo	Steel billets	United States
1575	_	Hammer lifter	Mixed iron and steel	
1576 1577		Hammer tenders	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe Continent of Europe
1578 1579	-	Hammermen	Mixed iron and steel	Continent of Europe
1580		do	Steel rails Mixed iron and steel	United States
1581 1583		do	Mixed iron and steel Mixed iron and steel	United States
1583		do	Mixed iron and steel	Great Britain
1584 1585		Hammerman and heaters' helper	Mixed iron and steel Mixed iron and steel	Great BritainUnited States
1586	_	Hammerman and laborer	Mixed iron and steel	United States
1587 1588		Hammermen's helpers and laborers	Mixed fron and steel Mixed fron and steel	United States
1589 1590		Hammersmithsdo	Mixed iron and steel Mixed iron and steel	Continent of Europe
1591	170	Hangers-on	Bituminous coal	Great Britain
1592	37	Haulersdo	Pig iron Mixed iron and steel	Great Britain
1594		do	Mixed iron and steel	Great Britain
1595 1596	55	do	Bituminous coal	United States
1597	156	Haulers and laborers	Bituminous coal	Continent of Europe
1598 1599		Haulers and miners	Bituminous coal	United States
1600	85	Hauler and switchman	Bituminous coal	United States United States
1602	-	Hauler and trammer	Bituminous coal	United States
1603	55	Hauler and trimmer	Bituminous coal	United States
1603	_	Head cutters	Bituminous coal	United States
1606		Head cutters and miners	Bituminous coal Mixed iron and steel	United States
1608 1609	8	Heaters	Finished bar iron	United States
1610	29	do	Finished bar iron Finished bar iron	United States
1611	-	do	Steel ingota	Continent of Europe United States
1613	_	10	Steel blooms	United States
1614		do	Steel blooms	United States Continent of Europe
1616	_	do	Steel rails	Continent of Europe
1617 1618	_	do	Mixed iron and steel	United States
1619 1620	-	do	Mixed iron and steel Mixed iron and steel	United States
1621		do	Mixed iron and steel	United States
1622		do	Mixed iron and steel Mixed iron and steel	United States
1624	_	do	Mixed iron and steel	United States
1625 1626		do	Mixed from and steel Mixed from and steel	United States
1627 1628	_	do	Mixed iron and steel	Continent of Europe Continent of Europe Continent of Europe
1629			Mixed iron and steel Mixed iron and steel	Continent of Europe
1630	_	do	Mixed from and steel Mixed from and steel	Continent of Europe
1633		do	Mixed from and steel	Great Britain
1633	=	do	Mixed from and steel Mixed from and steel	Great Britain Great Britain

Work-	Actual daily earnings,		Actual	condition for	r period.		had conti	if workmen nuous eni- ment.	Mai
ing days in the period.	or daily rate near est to average	Different	Days of	work done.	Ears	ings.	Necessary	Consequent average earnings	al num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
91 2022 2022 48 813 313 313 313 313 313 313 313 313 31	\$1.00\(\frac{1}{2}\) 1.84\(\frac{1}{2}\) 2.03\(\frac{1}{2}\) 1.40\(\frac{1}{2}\) 1.55\(\frac{1}{2}\) 1.55\(\frac{1}{2}\) 1.40\(\frac{1}{2}\) 1.40\(\frac{1}{2}\) 1.40\(\frac{1}{2}\) 1.55\(\frac{1}{2}\) 1.55\	292174141516131435211321612261311217472621352601122753544109720	153 96 333 113 305 420 308 253 119 (a) 201 1,840 302 1,840 316 136 130 230 245 316 130 245 316 130 245 316 130 250 420 265 420 265 420 277 114 143 144 149 149 149 149 149 149 149	77 11 17 115 44 105 308 63 119 (a) 302 307 356 66 114 (a) 68 136 136 136 136 136 137 77 (a) 2 201 201 201 201 217 236 81 188 88 184 67 62 (a) (a) (a) (a) (a) (b) 160 160 160 160 160 160 160 160 160 160	\$154 1777 677 1858 1660 1670 1899 2, 8066 6299 4, 144 2099 1, 1673 2088 1882 2956 629 4, 144 2099 1, 1673 2010 4, 144 2011 104 2011 104 2011 104 2011 104 4, 022 2, 230 4, 144 1, 1674 1, 1674	\$77 20 314 225 266 167 166 167 189 561 163 69 1, 104 198 182 132 133 203 206 52 22 22 22 22 22 22 22 22 22 23 34 414 513 149 414 518 518 518 518 518 518 518 518 518 518	1. 68 0. 47 0. 167 0. 167 0. 168 0. 47 0. 168 0. 17 0. 188 1. 1. 188 0. 17 0. 188 1. 1. 188 0. 188 1. 1. 188 0. 188 1. 1. 188 0. 188 1. 188 0. 188 1.	\$92 372 410 413 29 171 160 533 246 (a) 155 268 143 81 81 85 152 268 217 208 217 218 228 218 219 228 219 219 228 238 248 248 258 278 288 298 298 298 298 298 298 29	156 156 156 156 156 156 156 156 156 156

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

	20			
Mar- gin-	Es- tab-		-	
al num- ber.	lish- ment num-	Occupation.	Industry.	Locality.
DOI.	ber.	1 8 3		
1634		Heaters and heaters' helpers	Mixed iron and steel	United States
1635 1636 1637		do	Mixed iron and steel Mixed iron and steel	United States
1638		Heaters and laborers	Mixed iron and steel Mixed iron and steel	United States United States
1639	1971	do	Mixed iron and steel	United States
1641		Heater and roller Heater and rougher	Mixed iron and steel Mixed iron and steel	United States
1642		Heater and rougher	Mixed iron and steel	United States
1613	8	Heaters' helporsdo	Finished bar iron Finished bar iron	United States
1645 1646	29	do	Finished bar iron	Great Britain United States
1647		do	Steel billets	United States
1648 1649		do	Steel blooms	United States
1650	_	do	Steel rails	Continent of Europe
1651 1652		do	Mixed from and steel Mixed from and steel	United States
1653 1654	-	do	Mixed iron and steel	United States
1655		do	Mixed iron and steel	United States
1656 1657		do	Mixed iron and steel	United States
1658	_	do	Mixed iron and steel	United States
1659 1660		do	Mixed iron and steel Mixed iron and steel	Continent of Europe
1661 1662	-	do :	Mixed iron and steel Mixed iron and steel	Great BritainGreat Britain
1663		do Heaters' helper and hooker Heaters' helpers and laborers	Steel billets	United States
1664 1665		Heaters' helpers and laborersdo	Mixed iron and steel Mixed iron and steel	United States
1666	_	do	Mixed iron and steel	United States
1667 1668	=	Heaters' helper and lighter-up Heaters' helpers and pilers Heaters' helper and puddlers' helper	Steel billets	United States
1669 1670	-	Heaters' helper and puddlers' helper Heaters' helper and scrappers' helper	Mixed iron and steel Mixed iron and steel	United States
1671		Heaters' heiner and tongaman.	Steel billets	United States
1672 1673		Heaters' helpers and transmitters	Steel billets	United States
1674	9	Heavers-up	Pig iron	Northern district, U.S.
1675 1676	32 42	do	Pig iron	Northern district, U.S Northern district, U.S
1677 1678	49 67	do	Pig iron	Northern district II S
1679	83	do	Pig iron	Northern district, U. S Northern district, U. S Southern district, U. S
1680 1681	103	do	Pig iron	Great Britain
1682	-	do	Mixed from and steel	United States
1683 1684	=	do	Mixed iron and steel Mixed iron and steel	Continent of Europe
1685 1686	7 9	Helper, lamp Helpers and laborers	Muck bar iron Pig iron	United States Northern district, U.S
1687	32	do	Pig iron	Northern district, U. S
1688 1689	42	do	Pig iron Mixed iron and steel	Northern district, U. S., United States
1690	9	Helper and metal carrier	Pig iron	Northern district, U. S Northern district, U. S
1691 1692	58	Helper and moulder	Pig iron	Northern district, U. S
1693 1694	_	Heiversdo	Mixed iron and steel Mixed iron and steel	Great Britain
1095	67	Hoisters	Pier iron	Northern district, U. S Southern district, U. S
1696 1697	109	Holders-up	Pig iron	Great Britain
1698 1699	_	Hookers	Steel billets	United States
1700		do	Mixed iron and steel Mixed iron and steel	United States
1701	-	do	Mixed iron and steel	United States

	daily earnings,		Actual o	ondition for	r period.		had contin		Mar
days in the period.	or daily rate near- est to average	Different	Days of w	ork done.	Earn	ings.	Necessary	Consequent average earnings	al nun ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
313	(a)	1	(a)	(a)	\$12	\$42	(a)	(a)	16
313	\$4.164	1 5	909	182	3, 787	757	2,91	\$1,304	16
155	2.48	1	56	56	139	139	0.36	385	16
313	(a)	1	(a)	(a)	284	284 148	(a)	(a)	10
168	1. 32	1	(a) 100	100	148	132	(a) 0, 60	(4)	1
155	2.41		191	96	461	231	1. 24	374	10
361	(a)	1	(a)	(a)	212	212	(a)	(a)	1
286	(a)	1	(a)	(a)	35	35	(a)	(a)	1
200	1. 201	7	1,703	243	2, 056	294	5. 69	361	1
236	2. 664	6	1, 338	223	3, 568	595	4.68	763	1
99	1.09	10	800	80	875	198	8. 08 9. 52	108	1
202 132	2.05	20	1,923	96 82	3, 9.72	271	3. 10	415	i
230	3. 31 4 4. 53	4	409 870	219	1, 355	902	3, 81	1,042	i
77	. 744	4	214	61	3, 967	46	3, 17	57	i
78	.824	38	1.711	45	1,409	37	21.93	64	1
313	(a)	5	(a)	(a)	559	112	(a)	(a)	1
2~6	(a)	5	(0)	(a)	1,706	341	(a)	(a)	1
286	(a)	9	(a)	(a)	1,697	189	(a)	(a)	1 1
313	2. 194	30	4, 010	134	8, 795	293	12.82	626	1
287	1.30	25	278	278	374	374 54	0.97	386 264	1
135	1.70	9	790	32	1, 345	483	5.09		lí
313	(n) 2.25	14	2,347	(a)	5, 276	377	7. 49	(a) 704	î
313	.42	8	1,940	243	810	191	6, 20	131	1
92	.703	47	2, 399	51	1,686	36	26.07	65	1
156	. 481	6	646	108	314	52	4. 14	76	1
53	(a)	19	(a)	(a)	556	29	(a)	(a)	1
202	2.474	1	99	99	245	245	0.49	500	1
313	1.85	5 2	781	157	1, 450	200	2.50 0.41	579	1
313	1. 51 1. 661	2	63 246	123	95	205	0. 79	234 520	li
202	1 471		57	57	107	107	0. 28	379	li
313	1. 874	1 2	460	230	823	412	1. 47	560	l i
313	2, 153	1	141	141	304	304	0, 45	675	l î
155	1.11	1 1	87	37	41	41	0. 24	172	1
202	2.28	1	85	85	194	194	0.42	461	1
202	2.17	2	122	61	265	133	C 60	439	1
287	1.89	9	489	122	923	231 129	1. 70	542	1
365	2.49 1.65	8	1, 905	52 238	1, 165	390	1. 28 5. 22	909 597	1
365	1.65	9	2, 452	272	3, 116	451	6. 72	605	l i
365	1.464	7	1, 358	194	4. 061 1, 989	284	3. 72	535	li
365	1.65	8	1, 848	231	3, 047	381	5. 06	602	î
92	1. 454	4	360	90	524	131	3.91	134	1 3
365	1.25	13	907	70	1, 136	87	2.48	457	1
91	. 75%	31	2, 060	66	1, 555	50	22. 63	69	1
286	1.77	36	3, 095	86	5, 490	153	10.83	507	1
287 313	1.87	103	37 440	8	15	15	0. 83 42. 94	538	1
155	1.50	1	13, 440	131	4, 788	46	0.10	112 233	1
365	2.02	8	1, 246	156	2, 517	315	3.42	737	i
365	1.48	2	81	41	120	60	0. 22	541	i
365	1, 424	ī	330	330	470	470	0.90	520	î
313	1.704	2 1	142	71	242	121	0.45	533	1
365	2.38	1	232	232	553	553	0.64	870	1
365	1, 72	1 1	347	347	597	597	0. 95	628	1
865	1.871	1	8	8	15	15	0.02	684	1
48	. 63	1	30	30	19	19	0.63	30	10
53	1.80	1	48 332	48	30	30	0.91	33	1
365 365	1.45	1	308	332	595	595 447	0.91	654 530	10
156	2, 371	5	598	120	1, 419	284	3, 83	270	10
202	2, 70	11	741	67	2,003	182	3. 67	546	10
313	1.25	17	1, 523	90	1, 913	113	4. 86	393	16
157	1.62	13	254 504	20	412 776	32 259	1.64	251 482	1'

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentsfor the establishment was obtained. In referring from this table to those on production by means of

	V.S.			
Mar-	Es-			
gin	tab-		* * * * * * * * * * * * * * * * * * * *	and the second second
al	meut	Occupation.	Industry.	Locality.
am-	num-	The state of the s	-	
er.	ber.			
	7K. V		0.00	-2
	_			- 1
702 703	_	Hookers-concluded	Mixed iron and steel Mixed iron and steel	Continent of Europe
704		do	Mixed iron and steel	Great Britain
705		do	Mixed iron and steel	Great Britain
706	_	Hookers, tumble	Steel billets	United States
707 708	7	Hookers and laborers	Steel ingots	United States United States
709		do	Mixed from and steel	United States
710		do Hookers' and puddlers' helpers Hooker and rollers' helper Hooker and rougher Hooker and rougher	Mixed iron and steel	United States
7H	_	Hooker and rollers' helper	Mixed iron and steel	Continent of Europe
713	_	Hooker and rougher	Mixed iron and steel Mixed iron and steel	United States
714		Hooker and screwman	Steel billets	United States
715		Hooker and screwman	Mixed iron and steel	United States
716	-	Hookers and tongamen	Steel billets	United States
717	29	Hookers-indo	Finished bar iron Mixed iron and steel	Great Britain
719		do	Mixed iron and steel	United States
720	96	Hookers-on	Bituminous coal	United States
721	107	do	Bituminous coal	United States
722 723		Hooker-out and laborer	Mixed iron and steel	United States United States
724	7	Hookers-up	Mixed iron and steel Muck bar iron	United States
725	9	do	Muck bar iron	United States
726	17	do	Muck bar iron	United States
727	26	do	Muck bar iron	United States
728 729		do	Steel rails	Continent of Europe
730		do	Steel rails	Continent of Europe
731	_	do	Mixed iron and steel	United States United States
732 733	_	do	Mixed iron and steel	United States
734		do	Mixed from and steel	United States
735		do	Mixed iron and steel	United States
736	_	do	Mixed iron and steel	United States
737 738		do	Mixed iron and steel	United States United States
739		do	Mixed fron and steel	Continent of Europe
740	_	do	Mixed iron and steel	Continent of Europe
741	_	Hookers-up and laborers	Mixed iron and steel	Continent of Europe
742		Hookers-up and laborersdo	Mixed iron and steel Mixed iron and steel	United States
744		do	Mixed from and steel.	United States
745	_	Hooker-up and piler	Mixed iron and steel	United States
746	_	do Hooker-up and piler Hookers-up and roughers	Mixed iron and steel	United States
747		Hooker-up and straightener	Mixed iron and steel Mixed iron and steel	United States
749	_	Horsemen	Pig iron Finished bar iron	Great Britain
750	170	do	Finished bar iron	Great Britain
751 753		do	Bituminous coal	Great Britain
753	170	Horseshoer	Pig iron	Northern district, U. S
53 754	_	do	Mixed from and steel	Continent of Europe
755	107	Hostlers and laborers	Bituminous coal	United States
750	109	Hostlers and laborersdo	Pig iron	Northern district, U.S. Southern district, U.S.
758	109	Hotpilers	Mixed iron and steel	Continent of Europe
750	-	Hot pilers	Mixed iron and steel	Great Britain
780	-	do Hot-bed hands	Mixed iron and steel	Great Britain
761		Hot-bed handsdo	Steel rails	Continent of Europe
76.3		do	Steel rails Mixed iron and steel	
704	49	Hot-blast men	Pig iron	Northern district, U. S
704 700	55	do	Pig iron	Northern district, U.S.
tar	103	do	Fig iron	Northern district, U.S Northern district, U.S Southern district, U.S Southern district, U.S
708	109	do	Pig iron	Great Britain
140	37	do	Pig iron	Great Britain

Work-	Actual daily earnings,		Actual	condition fo	had contin		Mar-		
ing days in the period.	or daily rate near- est to average	Different	Days of v	ork done.	Eart	nings.	Necessary	Consequent average earnings	gin al num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
313 313 313 202 213 213 313 313 313 313 313 313 313 31	#0.63	16 40 37 6 5 1 1 1 2 2 2 2 5 4 2 2 4 1 1 1 2 2 2 2 1 4 1 4 1 4 2 2 2 1 4 1 1 1 1	3, \$86 9, 989 1, 132 1321 1330 19104 37 (a) 2099 250 699 564 2000 191 187 286 411 446 2988 1, 037 1, 564 (a) 2, 398 1, 159 (a) 18 (a) 2, 158 (a) 2, 158 (a) 41 1, 289 (a) 437 1, 584 294 49 (a) 437 198 362 244 99 (a) 437 198 362 244 99 (a) 1, 231 1, 241 1, 261 1,	243 250 311 86 19 104 (a) 209 250 69 141 100 49 209 34 143 32 45 34 223 149 133 232 (a) 133 (a) 133 243 (a) 143 243 77 78 362 347 116 366 84 58 39 (a) (a) 62 64	\$2, 450 6, 275 521 1, 491 39 164 533 115 157 573 503 115 157 2, 240 250 65 521 964 792 250 683 8, 132 267 1, 984 4, 010 1, 970 594 4, 010 1, 970 1, 138 4, 138 1, 1	\$153 \$153 1157 144 298 39 104 277 130 3 115 157 157 157 157 157 157 157	12. 41 31. 91 23. 60 6. 05 2. 13 0. 23 0. 24 (a) 6. 07 0. 07 0. 33 0. 24 0. 93 0. 63 3. 33 0. 24 0. 92 2. 88 0. 99 2. 88 1. 56 1. 04 4. 29. 71 5. 47 (a) 7. 86 (a) 6. 10	ploy6. \$197 222 31 700 515 494 494 222 (a) 195 507 470 357 460 318 508 97 269 670 670 670 470 (a) 258 (a) 626 36 67 470 (a) 370 269 686 67 470 (a) 370 258 (a) 626 366 67 470 (a) 370 258 (a) 626 366 511 488 (a) 370 258 (a) 626 366 511 470 911 88 96 653 97 470 109 91 91 91 91 91 91 91 91 91 91 91 91 91	177 177 177 177 177 177 177 177 177 177

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

"[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment wumbers relate to the cost of preduction presents for the establishment was obtained. In referring from this table to these on preduction by means of

				-	
Mar- gin- al num- ber.	Es- tab- bah- ment num- ber.	Occupation.	Industry.	Locality.	
10	3.50		b	a 7.5	
1770	55	Hot-blast man and scraper	Pig iron	Northern district, U.S	
1771 1772	10	Hot-cinder men and laborers	Pig iron	Northern district, U.S Northern district, U.S	
1773	170	Hurriers	Pig iron Bituminous coal	Great Reitain	
1773 1774		Hydraulic men	Steel ingota	Continent of Europe	
1775	156	Hydraulic men Inclined-plane men	Bituminous coal	Continent of Europe	
1776	101	Inclinemen	Pig iron	Southern district, U.S.	
1777		Ingot carriers	Steel ingots	Continent of Europe	
1770	- 3	Ingot chargers.	Steel rails	Continent of Europe	
1780	7	Ingot chargers	Steel ingota	United States	
1781	-	do	Steel ingota	Continent of Europe	
1782 1783		Inget leader and laborer	Mixed iron and steel Steel ingots	Continent of Europe	
1784	7	Ingot loader and mould capper	Steel ingots	United States	
1785	7	Ingot loader and mould swinger	Steel ingots	United StatesUnited States	
1786		Ingot wheelers	Steel rails	Continent of Europe	
17×7 1788	-	Ingot wheelers' helpers	Mixed iron and steel	Continent of Europe	
1789	1	Inspectors	Steel rails	United States	
1790	_	Inspectors	Steel billets	United States	
1791	-	do	Steel rails	Continent of Europe	
1792		Inspector, bloom	Mixed iron and steel Mixed iron and steel	Great Britain	
1793 1794	58	Inspectors car	Pig iron	Great Britain. Northern district, U.S	
1795	1	Inspectors, car	Steel ingots	United States	
1796	_	Inspectors, plank	Mixed iron and steel	Continent of Europe	
1797 1798	-	Inspectors, rail	Mixed iron and steel	Great Britain	
1799	1	Inspector and stamper	Steel ingots	United StatesUnited States	
1800		Inspector and stamper	Steel billeta	United States	
1801	41	Iron barrowman	Pig iron	Northern district, U.S., Southern district, U.S.,	
1802 1803	101	Iron breakersdo	Pig iron	Southern district, U.S.,	
1804		do	Steel ingots	Continent of Europe	
1805	_	do	Mixed iron and steel	Continent of Europe	
1806	101	Iron carriers	Pig iron	Southern district, U.S Southern district, U.S	
1807 1808	101	Iron graderIron bandlers	Pig iron	Southern district, U.S	
1809	22 32	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S Northern district, U.S	
1810	42	do	Pig iron	Northern district, U.S.	
1811	49	do	Pig fron	Northern district, U.S	
1812 1813	67 95	do	Pig iron	Northern district U.S.	
1814	103	do	Pig iron	Southern district, U.S.	
1815	109	do	Pig iron	Southern district, U.S Southern district, U.S Southern district, U.S Southern district, U.S	
1816	114	do	Pig iron	Southern district, U.S.,	
1817 1818	103	do	Steel ingota Pig iron	United States	
1819	22	Iron handler and keeper	Pig iron	Southern district, U.S Northern district, U.S	
1820	32	do	Pig iron	Northern district, U.S Southern district, U.S	
1821	103	do	Pig iron	Southern district, U.S	
1822 1823	1	do	Steel ingots	United States	
1824	1	Iron handler and screener	Steel ingots	United States	
1825	i	Irop handler and stocker Iron handlers and unloaders	Steel invota	United States	
1826	101	Iron loaders	Pig iron	Southern district U.S.	
1827	_	do	Mixed iron and steel Mixed iron and steel	Continent of Europe	
1828 1829		Iron melters	Steel ingots	Continent of Europe Continent of Europe Continent of Europe	
1830	7	Iron melters	Steel ingots	United States	
1831	10	Iron men	Pig iron	United States Northern district, U.S	
1832	170	do	Bituminous coal	Great Britain	
1833 1834	10	Iron men and laborers	Pig fron	Northern district, U.S Northern district, U.S	
18'5	41	Iron movers	Pig iron	Northern district II S	
1836	41	Iron movers Iron mover and moulders' helper	Pig tron	Northern district, U.S.,	
1837	10	Iron piler	Pig iron	Northern district, U.S	

Work.	Actual daily earnings,		Actual o	ondition fo	r period.			í workmen nuous em- nent.	Mar
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Zarn	ings.	Necessary	Consequent average carnings	gin- al num- ber.
	daily carnings.	employés.	Total.	Average.	Total	Average.	employés.	per em- ployé.	
181 365	1. 50½ 1. 50	1 10	1 63 1, 038	168 104	268 1, 538	268 154	0. 98 2. 84	289 541	1770 1771
363	1.411	4	861	215	1, 220	305	2 36	517	1773
91 78	. 59	116	8, 700 271	75 68	5, 148 128	44 35	95.60 3.47	54 40	1773 1774
77	. 581	20	751	38	401	20	3. 47 9. 76	41	1775
184	1. 15	2 3	310	155	3# 3 136	181	1.68 2.42	215 56	1776 1777
78	. 72 . 50	2	189 36	63 18	136	45	0.46	39	1778
78	. 56	8	475	59	200	84	6.09	44	1779
230 27	5. 194 . 793	11	915	158 19	4, 754 165	792 15	3.98 7.70	1, 195 21	1780 1781
313	. 46	26	3, 957	152	1, 818	70	12, 64	144	1783
27	4.38	1	186	180	816	816	0. 11 0. 81~	1,000	1788 1784
230	5. 24	l i	140	140	784	734	0. 61	1, 206	1785
78	. 67	14	789	56	532	38 79	10. 12	53	1726
313 78	. 475	1 7	167 252	167 50	79 197	79 28	0. 53	148 44	1787 1788
313	2,70	1 1	61	61	165	165	0.19	847	1789
202 78	2. 38½ .53	2	18 197	66	42 104	21 35	0. 08 2. 53	471 41	1790 1791
156	1. 214	1 2	265	133	322	161	1.70	190	1793
48	. 81	1	48	48	39	39	1.00	39	1793
365 313	1.56 1.25	5	1,301	260 102	2, 029 240	406 244	2.56 0.61	569 291	1794
77	. 661	2	86	43	57	29	1.11	51	1796
48	.09 2.25	3	136	136	89	45 200	1.88	47 690	1797
813 202	1.964	1	54	54	300 106	106	0. 43 0. 27	897	1798 1799
203	1.934	1 1	142	143	275	275	0. 27 0. 70	391	1800
167	1.65	1 15	(a) 78	78 (a)	129 2, 546	129 170	0.47 (a)	276 (a)	1801
78	.471	6	217	41	7117	20	3.17	87	1803
313 79	.48	2 2	138 146	73	. 66 100	33 50	6.44 1.85	150 54	1804 1805
184	1.03	22	1,408	68	2, 893	132	8.14	356	1805
181	1.96	1	153	158	300	200	0. 83	351	1807
365 365	1. 70 2. 33	. 25	2,009 1,828	80 166	3, 412 4, 242	136 386	8. 59 5. 01	620 847	1808 1809
365	2, 23	4	1,460	365	3, 258 3, 122	815	4.00	815	1819
305 305	1.96	12	1,591 2,583	133	3, 122	200	4.06	716	1811
834	1.61 1.404	6	381	235 64	4, 157 535	378 80	7. 07 1. 14	567 469	1813 1813
365	1.41	17	2, 680	158	3, 773	222	7. 34	514	1814
365 365	1.214 1.10	18 6	2, 000 1, 082	111 180	2, 426 1, 181	135 197	5. 48 2. 96	443 398	1815 1816
313	1.624	61	2,018	73	8, 343	53	6.45	518	1817
365 365	1.72	1 1	313	312	536 28	536 28	0. 85 0. 05	627 568	1818
365	1. 70	5	18 887	18 67	573	115	0. 92	621	1819
865	1. 59	3	171	57	272	91	0.47	581	1-21
313	1.45	15	354 46	21	513 64	34	1. 13 0. 15	454 435	18:2 1823
313	1. 334	ī	3	3	4	4	0.01	417	1834
313 184	1.48	6	37	(0) 6	55 1, 603	178	0.12	(a)	1825 1826
313	(a) .554	21	(a) 5,747	(a) 274 200	3, 192	152	(a) 18.36	174	1827
813	.55	6	1, 202		GG4	111	3.81	173	1828
2:10	. 791 2, 76	7	465 118	06 148	369 409	9 53 409	6. 04 0. 64	61 636	1830
365	2.76 1.76	17	2, 868	169	5, 046	297	7. 86	642	1831
91 345	1.024	2	152 663	76 83	156 975	78 122	1.68 1.82	93 537	1833
305	1.63	8	63	65	106	106	0.18	595	1834
167 167	1.511	1 1	1, 303	143	1, 975 262	219 262	7.80	253 262	1835 1836
365	1.00	1 1	104	3	203	5	0.01	C. 8	1837

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Bath line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of predection presentafor the establishment was obtained. In affection from this table to the cost of readering by respect

_	_			
Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	· Occupation.	Industry.	Locality.
1838	101	Iron piler—concluded	Pig iron	Southern district, U.S
1839 1840 1841	7	Iron pourersdo	Steel ingots Steel ingots	United States Continent of Europe Continent of Europe
1842	7	Tron pourer and laborer	Steel ingota	United States Northern district, U.S.
1843	42 36	Iron sortersdo	Pig iron	Northern district, U.S.
1844	7	Iron stockers	Muck bar iron	Great Britain
1846		do	Steel ingota	United States Continent of Europe
1847		do	Steel ingota	Continent of Europe
1848	7	Iron stocker and scrap loader	Steel ingots	United States
1849	-	Iron tester	Mixed iron and steel	United States
1850 1851		Iron tester and stoker	Mixed iron and steel Pig iron	United States
1852		do	Mixed iron and steel	Continent of Europe
1853	-	do	Mixed iron and steel	Continent of Europe Continent of Europe Continent of Europe
1854	-	do	Mixed iron and steel	Continent of Europe
1855	101	Tool or and the second	Mixed iron and steel	Great Britain
1856 1857	1	Iron wringers Janitors	Pig iron	Southern district, U.S
1858	_		Steel ingote Steel billets	United States United States United States
1859	-	do	Mixed iron and steel	United States
1860	- 20	Joiners	Pig iron Finished bar iron	Great Britain
1861 1862	29	do	Mixed iron and steel	Great Britain Continent of Europe
1863		do	Mixed iron and steel	Continent of Europe
1864 1865	9	Keepers	Pig iron	Northern district U.S.
1865	10	do	Pig iron	Northern district, U.S
1866	22 32	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S
1868	41	do	Pig iron	Northern district, U.S
1869	42	do	Pig iron	Northern district, U.S
1870	49	do	Pig iron	Northern district II S
1871	55 58	do	Pig iron	Northern district, U.S
1872 1873	67	do	Pig iron	Northern district, U.S Northern district, U.S Northern district, U.S Northern district, U.S
1874	83	do	Pig iron	Northern district U.S.
1875	84	do	Pig iron	Northern district U.S.,
1876	95	40	Pig iron	Southern district, U.S
1877 1878	101	do	Pig iron	Southern district, U.S.
1879	109	do	Pig iron	Southern district, U. S Southern district, U. S Southern district, U. S
1880	114	do	Pig iron	Southern district, U. S
1881	40	do	Pig iron	Continent of Europe
1882 1883	36	do	Pig iron	Continent of Europe
1884	37	do	Pig iron	Great Britain
1885	-	do	Pig iron	Great Britain
1886	_	do	Steel ingota	Continent of Europe Continent of Europe
1887	717	Keepers and keepers' helpers	Mixed iron and steel	Continent of Europe
1889	114		Pig iron	Southern district, U. S Northern district, U. S
1890	10	do	Pig iron	Northern district, U. S
1891	_	Keeper's apprentice Keepers' helpers	Pig iron Steel ingots	Continent of Europe
1892	10	Keepers' helpersdo	Pig iron	Northern district, U. S.
1894	55 55	do	Pig iron	Northern district, U. S Northern district, U. S
1895	58	do contrato de contrato de la contrato del contrato del contrato de la contrato del contrato de la contrato del contrato de la contrato del contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato del contrato de la contrato del contrato del contrato del contrato de la contrato de la contrato de la contrato de la contrato de la contrato de la contrato	Pig iron	Northern district, U. S.
1896	84	do	Pig iron	Northern district, U. S Southern district, U. S
1897	95	do	Pig iron	Southern district, U. S
1898	101	do	Pig iron	Southern district, U. S
1899	114	do	Pig iron	Continent of Egrope
1901		do	Pig iron	Continent of Europe
1902	-	do	Pig iron	Great Britain
1903	1	Keeper's helpers and laborers	Steel ingots	Continent of Europe
1904	10	Keeper's helpers and laborersdo	Pig iron	Northern district, U. S Northern district, U. S
1903	1 44	DATE OF THE PROPERTY OF THE PR	~ 15 HVM **********	Antendra district U. S

Work-	Actual daily earnings,		Actual c	ondition fo	r period.		had conti	f workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of w	ork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
184 230 77	(a) \$1.01 .688	2 1 5	(a) 185 320	(a) 185 64	\$80 742 219	\$40 742 44	(a) 0.80 4.16	(a) \$922 53	183 183 184
27	3. 734	1 1	51 218	26 218	45 814	· 23	1.89 0.95	24 859	184
365 99 230	1.40 .97 1.75	4 1	286 540 107	286. 135 107	400 524 187	400 131 187	0, 78 5, 45 0, 47	510 96 402	184 184
77 78 230	. 654 . 584 2.00	27 1	1, 462 113	60 54 113	78 853 225	39 32 225	1.55 18.74 0.40	50 46 458	184 184 184
155 155	1.91	1 1	72 105	72 105	138 175	138 175	0. 46 0. 68	297 258	18
313 313	.60± .46	1 15 5	1,819 1,124	102 121 225	62 837 611	62 56 122	1. 12 5. 8° 3. ° s	55 144 170	18 18 18
79 48 184	. 67 (a) 1. 10	3 7 11	225 (a) 728	(a) 75 66	196 217 803	65 31	2 65 (a° 3,96	(a) 203	18 18 18
365 235	.50	1 1	111 244	56 244	56 120	73 28 120	0.30 1.04	. 184 116	18
313 135 108	1.35 1.21 1.30	1 4	308 486 102	308 122 102	416 589 131	416 147 131	0.98 3.60 0.94	423 164 139	18 18 18
313	.70	1	632 378	316 378	443 236	222 236	2.02 1.21	219 195	18
365 365 365	3.25 2.15 1.90	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	162 584 695	292 348	526 1, 220 1, 328	263 610 664	0.44 1.50 1.90	1, 185 763 697	18 18 18
365 167 365	2.25 1.85 1.85	2 2 2	666 328 680	333 164 340	1, 495 606 1, 268	748 303 634	1. 82 1. 95 1. 86	819 309 681	18 18 18
365 181 365	1.80 2.30 2.84	2 2	518 305 1, 341	250 153 335	932 700	466 350	1.42 1.69	637 415	18
365 92	2. 10 1. 90	3	796 160	265 80	3, 806 1, 673 304	952 558 152	3. 67 2.18 1.74	1, 036 767 175	18 18 18
122 334 184	1.45 1.75 2.00	2 2 2 2 5	231 580 714	116 290 143	335 1,011 1,425	168 506 285	1. 89 1. 74 3. 88	177 582 367	18 18 18
365 365	1.85 2.00 1.50	3 3	704 680	235 227	1, 276	425 453	· 1.93	662 729	18
365 90 91	1. 07 1. 351	2 2	127 180 171	127 90 86	191 193 232	101 97 116	0.35 2.00 1.88	549 123 97	18 18 18
91 91 135	1.184	7 6	301 568 810	75 81 135	356 577 1, 248	89 82 208	3.30 6.24 6.00	108 92 208	18 18 18
78 92 365	.844	10 16	734 1, 376	73 86	620 772	62 48	9. 41 14. 96	66 52	18
365 365	1.313 2.704 1.72	1 1	338 248 25	169 248 25	671 43	223 671 43	0.93 0.68 0.07	481 988 628	18 18
78 365 365	1.763 1.57	1 9 14	2,609 3,047	290 218	4, 603	511 342	0. 18 7. 14 8 35	644 573	18 18 18
181 365 122	1. 814 1. 784 1. 254	20	1, 176 5, 466	131 273	4, 786 2, 133 9, 751	237 488	6.50 14.93	328 651	18
334 184	1.40	15 30	1, 334 2, 122	115 89 71	578 1, 868 3, 015	145 125 101	3.78 3.99 11.53	153 468 261	181 181 181
90 91	1.15 .74 .81	2 2 10	378 171 787	189 86 79	427 126 637	214 63 64	1.04 1.90 8.65	412 66 74	186 196 196
135 78 365	. 934 . 48 1.50	6	810 29 58	135 29	755 14	126	6.00 0.37	126 38	19
365	1.38	1 1	13	58 13	87 18	87 18	0.16	548 505	19

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to these on production by means of

	Ea-	",		
Mar- gin- al num. ber,	tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1906	55	Keeper's helpers and laborers—concl'd	Pig iron	Northern district, U. S
1907	58	do	Pig iron	Northern district, U. S
1908 1909	101 55	Keeper's helper and metal carrier	Pig iron	Southern district, U. S Northern district, U. S
1910	55	Keeper's helper and scraper	Pig iron	Northern district, U. S
1911 1912	10	Keeper's helper and stock preparer	l'ig iron	Northern district, U. S Continent of Europe
1913		Keeper-up and lighter-up	Mixed iron and steel	United States
1914	101	Kilu man Laboratory boy	Pig iron	Great Britain
1915	101	Laborers	Pig iron	Southern district, U.S Northern district, U.S
1917	10	do	Pig fron	Northern district, U.S.,
1918	22 32	do	Pig iron	Northern district, U. S Northern district, U. S
1919 1920	41	do	Pig fron	Northern district, U. S.
1921	42	do	Pig iron	Northern district, U.S
1922 1923	49 55	do	Pig iron	Southern district, U. S Northern district, U. S
1924	58	do	Pig iron	Northern district, U. S
1925	67 83	do	Pig iron	Northern district, U. S Northern district, U. S
1926	84	do	Pig iron	Northern district, U. S
1928	95	do	Pig iron	Southern district, U. S
1929	101	do	Pig iron	Northern district, U. S Southern district, U. S
1931	109	do	Pig irou	Southern district, U. S
1932 1933	114	do	Pig iron	Southern district, U. S Continent of Europe
1934	40	do	Pig iron	Continent of Europe
1935	36	do	Pig iron	Great Britain
1936	37	do	Muck bar iron	United States
1938	9	do	Muck bar iron	United States
1939 1940	17 26	do	Muck par iron	United States
1941	8	do	Finished bar iron	United States
1942 1943	29	do	Finished bar iron Finished bar iron	United States
1944	1	do	Steel ingots	United States
1945	2	do	Steel ingota	United States
1946	5 7	do	Steel ingota	United States
1948	_	do	Steel ingota	Continent of Europe
1949		do	Steel ingota	Continent of Europe
1931	-	do	Steel billets	United States United States
1952 1953		do	Steel blooms	United States
1954		do	Steel rails	Continent of Europe
1955	_	do	Mixed from and steel	United States
1956		do	Mixed Iron and steel	United States
1958	_	do	Mixed iron and steel Mixed iron and steel	United States
1950	-	10	Mixed iron and ateel	United States
1961	1-	do	Mixed fron and steel.	United States
1962	-	do	Mixed iron and steel	United States
1964		do	Mixed iron and steel	Continent of Europe
1965		do	Mixed iron and steel	Continent of Europe
1967		do	Mixed iron and steel	Continent of Europe
1968		do	Mixed in and steel	Great Britain
1959	-	do	Mixed fron and steel	Great Britain
1971	18	do	Bituminous coal	United States
1972	20	,40	Bituminous coal	United States.

Work-	Actual daily earnings,		Actual	ondition fo	r period.		had contin	f workmen mous em- nent.	Ma
days n the eriod.	or daily rate near est to average	Different	Days of t	vork done.	Earn	ings.	Necessary	Consequent average earnings	gin al nun ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
181	\$1.50½	1	152	152	\$220	\$229	0.84	\$273	19
365	1, 69	1	119	119	201	201	0.33	617	19
184	1.00 2.39	1 1	18	18	43	43	0.01 0.10	184 432	190
181	1. 60%	î	172	172	276	276	0.95	290	19
365	1.56	1	251	251	392	392	0. 69	570	19
92	. 49	12	84	7	41	3	0.91	45	19
313 135	2.114	1 1	313 144	313	662 111	6/32 111	1.00	662	19
184	1.00	î	118	118	113	113	0.64	104 176	19
365	1.401	84	2,515	30	3, 559	43	7.01	. 513	19
313	1. 25	100	5, 002	51	6, 393	64	16.17	395	19
313	1.414	192	3, 468 7, 046	56	9, 942	79 52	9. 50 22. 51	516	19
143	1. 201	44	3, 387	77	4, 082	93	23. 68	- 442 172	19
313	1. 25	49	9, 317	190	11, 512	235	20, 77	387	19
313	1. 29	30	4,003	133	5, 185 3, 794 24, 386	173	29. 77 12. 79	405	111
155 313	1. 334	53 300	2, 841 17, 137	54	74 766	72 81	18 32	207	19
313	1. 25	48	4, 939	103	6, 361	133	54. 76 15. 75	401	19
79	1. 20	12	461	39	557	46	5. 87	95	19
122	1.00	34	2, 030	60	2, 073	61	16.61	125	19
334 184	1.074	37 118	855 1,505	23	1,545	25 13	2.57	360	15
365	. 963	256	7, 564	30		28	8.18 20.72	189 352	19
313	1. 034	233	10, 290	44	7, 291	46	32. 87	324	19
313	.99	63	4, 035	64	3, 003	63	12, 89	310	19
90	.64	3 6	116	39 75	74 221	25 37	1. 29 4. 93	57 45	19
91	.401	21	1,500	71	746	36	16.49	45	19
91	. 52	107	8, 370	78	4, 348	41	92.08	47	19
155 313	1.26	42 72	5, 737	80	6, 979	18	2.95 18.32	196	19
313	1.20	5	200	40	242	48	0.64	381 379	15
313	1.354	34	928	27	1, 257	37	2,96	424	19
299	1. 26	21	4, 323	206	5, 448	259	14.45	377	19
213 108	1.26	35	1, 9:0	55 121	2, 421	69	6.14	395	19
313	1, 294	186	4, 123	22	5, 338	29	13, 18	405	19
144	1. 54	75	4, 290	57	8, 616	88	29. 80	222	10
132	1. 25	5	92	18	116	23 24	0.70	166	19
251	1.50	44 9	697 650	16 72	1,045	44	2.78 8.44	376 47	19
27	. 67	40	618	15	415	10	22.89	18	111
78	. 50	39	1, 693	43	. 818	22	21. 71	39	19
202	1.25 1.54	60	2,742 3,823	62 64	3, 444 5, 882	78 98	13, 57 26, 56	254	19
251	1. 431	111	7, 072	64	10, 166	92	28. 17	361	19
78	. 53	25	318	13	168	7	4.08	41	19
313	(a)	250	(a)	(a)	12, 785	49	(a)	(a)	19
313	(a)	118	(a) 13, 048	(a)	23, 640 12, 312	79 104	(a) 41.69	(a) 295	19
313	1.314	679	46, 040	68	60, 655	89	147, 11	413	19
313	1. 364	172	14, 577	85	19, 914	116	46.57	428	19
168 155	1.415	119	3, 248 2, 632	45 22	3, 313	63 28	19.93 16.98	238 195	19
313	(a)	(8)	(a)	(a)	36, 419	(6)	(4)	(a)	19
313	1. 334	157	11,812	75	15, 756	100	37.74	418	19
77	.61	7	11 000	70	300	43	6.39	47	19
313 92	.31	80 51	11, 029 2, 272	138	3, 400	19	35, 23 24, 68	96 40	19
313	.36	62	12, 988	209	4, 653	75	41.50	112	19
48	.50	114	3, 438	30	1, 725	15	71, 63	24	19
156	. 854	6	887	148	758	126	5. 69	133	19
53 158	1.50	80	3, 143 287	39	1,655	21 216	59.30	237	19
313	1. 174	4	156	30	183	46	0. 50	367	19

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

b Number of employee not given.

H. Ex. 265-34

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

(Each line shows the total of an eccupation in an establishment. In a like eccupation the facts for the periods are of equal length. The establishment numbers relate to the cost of preduction presents for the establishment was obtained. In referring from this table to those on production by means of

dar- gin- al um- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
1973	55	Laborers—concluded	Bituminous coal	United States
1974	107	do	Bituminous coal	United States
975 976	109	dodo	Bituminous coal	United States
977		do	Bitumipous coal	United States
978	_	do	Bituminous coal	United States
979	110	do	Bituminous coal	United States
980	156	do	Bituminous coal	Continent of Europe Continent of Europe
982	170	do	Bituminous coal	Great Britain
983	- 6	do	Coke	United States
984 985	13 28	do do	Coke	United States
1986	28	do	Coke	United States
1987	29	do	Coke	United States.
988	-	do	Coke	Continent of Europe
1989	12	do	Iron ore	United States
1991	42	do	Iron ore	United States United States
1992	48	do	Iron ore	United States
1993	51 61	do	Iron ore	United States
1995	72	do	Iron ore	United States
1996	77	do	Iron ore	Continent of Europe
1097	80	do	Iron ore	Continent of Europe
1998	40	Laborers, boiler	Steel blooms	United States Continent of Europe
2000	- 10	Laborers (boys)do	Mixed iron and steel	United States
2001	_	do	Mixed iron and steel	United States
2002	83	Laborers, converter Laborers, furnace	Steel ingota	Continent of Europe
2004	- 63	do	Pig iron	Northern district, U.S Great Britain
2005	_	do Laborers, general Laborer, machine shop	Pig iron	Great Britain
2006	42	Laborer, machine shop Laborers, railroad	Iron ore	United States
2007	96	Laborers, surface	Steel blooms	United States
2009	148	do	Bituminous coal	Dominion of Canada
2010	12	do	Iron ore	United States
2011	96	Laborers, underground	Bituminous coal	United States
2013	148	do	Bituminous coal	Dominion of Connds
2014	12	Laborers, yard	Iron ore	United States
2015	101	Laborers, yard	Pig iron	Southern district II &
2016 2017	1	Laborers and ladlemen	Steel ingota	United States
2018	1	Laborers and lifters	Steel ingots	Linitari States
2019	26	Laborer and loader	Bituminous coal	Cuited States
2020	10	Laborer and machinist	Pig iron	Northern district, U.S. Northern district, U.S.
2021	9.6	Laborers and masons	Mixed iron and steel	United States
2023	_	do	Coke	Continent of Engage
2024	72	do	Iron ore	L dited States
2025 2026	9	Laborer and masons' helper Laborers and metal breakers	Mixed iron and steel Pig iron	Northern district IT &
2027	7	do	Steel ingots	United States
2028	_	Laborers and metal carriers	Steel blooms	United States
2029	58	Laborers and metal carriers	Pig iron	Northern district, U.S. Northern district, U.S.
2030 2031	2	Laijorers and metal wheelers	Steel ingots	Luited States
2032	7	Laborers and miners	Steel ingota	Cited States
2033	96	Laborers and miners	Bituminous coal	Differi States
2034	109	do	Bituminous coal	United States
2035		do	Bitumizous coal	L Blied States
2037	42 72	do	Tron are	l'inited States
		나는 그 그 이에 보는데 그녀들까? 그 아이 그 그가 있다면 하다 아이지 그래까지 마음하다 사용하다 시작하다 게	Iron ote	I niful States
2038 2039	148	Laborers and miners' belpers	Disaminana	United States Dominion of Canada United States

Work- earnings ing or daily			Actual c	ondition for	period.		Condition is had contin	mons em-	Me
days in the period.	est to average	Different	Days of v	vork done.	Earn	ings.	Necessary employés.	Consequent average earnings	al num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	cmpioj cm	per em- ployé.	
313	\$1.50	3	15	5	\$23	#8	0.05	\$480	19
313	1. 431	12 48	359	30	515	43	1.14	449	19
313	(a) 1, 30	1	(4)	(a) 10	1, 623	34	(a) 0.03	(a)	19
313	1.334	17	338	20	453	13	1. 08	419	19
313	1.72	41	1, 616	40	2, 832	69	5. 26	539	19
313	(a)	288	(a)	(a)	17, 096	50	(a)	(a)	10
77	. 60	5	10	2	6	1	0.13	46	19
52	. 51	2	61	31	31	16	1.17	26	19
91	.84	7 86	1, 403	77	455	65	5. 93	77	19
313	1.31	47	5, 395	16	1, 359 7, 061	16	15. 25 17. 24	410	19
313	1.00	42	1, 938	46	1, 941	46	6. 19	313	19
313	1. 234	38	1,605	28	1, 980	34	5. 13	386	19
365	1.10	10	572	57	629	63	1.57	401	19
365	. 32	7	533	76	170	24	1.46	117	18
313	1.23	134	3, 308	25	4, 085	30	10.57	387	19
313	1.65	133	11,006	32 83	12,906	53	0.31	518	19
313	. 984	31	2, 112	68	2,077	97 67	35. 35 6. 75	365	19
313	.994	62	4, 553	73	4, 523	73	14.54	311	18
155	1.00	1	2	2	2	2	0.01	155	1 16
313	1.654	194	8, 157	42	13, 480	69	26.06	517	19
313	. 56	5	170	34	95	19	0.54	175	19
158 230	1, 554	90	2,654	172	313	104	3.27	96	11
90	. 354	20	143	72	4, 128	46 26	11. 54 1. 59	358 33	11
313	.84	130	7, 602	58	6, 382	49	24. 26	263	20
313	. 45	8	601	76	274	34	1.93	142	20
27	. 694	6	121	20	84	14	4.48	19	30
79	1. 13	2	156	78	176	88	1.97	80	20
135 135	. 771	10	1, 29t 721	129	997	100	9.56	104	20
313	1.25	1	206	120 296	300	399	5, 34 0, 95	106 422	20
144	1.40	7	597	85	835	119	4. 15	201	20
313	1. 384	8	132	17	183	23	0.42	434	20
313	. 90	24	3,482	145	3, 159	132	11. 12	284	20
313	1. 62	28	3,098	111	5, 035	180	9, 90	509	20
313	1,00	1	107	94	94	94	1.02	93	20
313	1, 914	12 29	4, 711	162	5, 350	17	0.84	600	20
313	1.70	83	7,006	84	11, 943	184	15. 05 22. 38	355 534	20
184	1. 134	33	1, 104	35	1, 251	30	6,00	209	20
144	1. 97	1 2	110	110	217	217	0.76	284	20
313	1.74	2	50	25	87	44	0.16	545	20
313 313	1. 394	2	338 131	169 131	471	236	1.08	436	20
313	1. 40	1	10	10	212	212	0.42	507 438	20
365	1.41	î	346	346	489	489	0. 95	516	20
313	1.51	1	13	13	20	20	0,04	482	20
365	. G6}	1	3	3	2	2	0.01	243	20
313	2. 53	1	79	70	200	200	0, 25	799	20
313 365	1. 394	1 10	314 1, 472	314	438 2, 524	438	1.00	437	20
251	1. 66	1	2, 412	9	15	. 252 15	4, 03 0, 04	626	20
251 251	1.58	1 3	211	70	333	111	0.84	418 396	20
365	2,08	8	081	123	2, 030	255	2, 69	759	20
313	1.70	2	17	9	29	15	0.05	534	20
144	1.84	2	514	47	173	87	0.65	. 265	20
251	2.97	2	184	02	547	274	0,73	748	20
313	(a) (a)	1 0	(a)	(a)	1 210	82 225	(a)	(a)	20
365	(a)	12	(4)	(a)	1, 349 2, 594	216	(a)	(4)	20
313		G3	(a)	(a) (a)	8, 238	131	(a) (a)	(a) (a)	20
313	1, 23	714	6, 194	203	8, 480	249	22. 03	383	20
313		10	842	81	1, 506	151	2.69	560	20
313		2 2	190	154	502	104 251	0, 94	343 510	20

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentafor the octablishment was obtained. In referring from this table to these on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2041 2042	7	Laborers and mould cappers Laborer and moulder	Steel ingots	United States
2043	1	Laborer and mouldman	Steel ingota	United States
2044	1 9	Laborers and oilers	Steel ingots	United States
2046	26	Laborers and ore crushers	Pig iron	Northern district, U. S. United States
2047	_	do	Mixed iron and steel	United States
2048 2049	9	Laborer and ore piler	Pig iron	Northern district, U.S.
2050		Laborer and pilerLaborer and pipe fitterLaborers and pit cleaners	Mixed iron and steel Mixed iron and steel	United States
2051	1 7	Laborers and pit cleaners	Steel ingots	United States
2052 2053	7	Laborer and pitmen's helper	Steel ingots	United States
2054	5	Laborer and platemen	Steel ingots. Mixed iron and steel :.	United States
2055		Laborer and pressman	Steel blooms	United States
2056	_	Laborers and puddlers	Mixed iron and steel Mixed iron and steel	United States
2057		Laborers and puddlers' helpers	Mixed from and steel	United States
2059		do	Mixed iron and steel	United States
2060	-	Laborers and punchers	Mixed iron and steel	United States
2061 2062	7	Laborer and pusher Laborer and rail breaker	Steel ingots	United States
2063	7	Laborer and regulator	Steel ingots.	United States
2064	-	Laborer and reverser	Mixed iron and steel	United States
2065 2066	700	Laborers and rollers	Mixed iron and steel Mixed iron and steel	United States
2067		Laborer and rougher Laborer and rougher-down Laborers and runners	Mixed iron and steel.	United States
2068	22	Laborers and runners	Pig iron	United States. Northern district, U.S.
2069	58	Laborer and scaleman	Steel ingots Pig iron	United States. Northern district, U.S.
2071	90	Laborers and scrap pilers	Mixed iron and steel	United States
2072		Laborer and scrap wheeler	Steel blooms	
2073	10	Laborers and scrapers Laborers and scrapmen	Pig iron	Northern district, U.S. Northern district, U.S.
2075		do	Steel ingota	United States
2076		Laborers and shearmen	Mixed iron and steel	United States
2077	41	Laborers and slagmen	Mixed iron and steel Pig iron	United States
2079	103	do	Pig iron	Northern district, U.S. Southern district, U.S. Northern district, U.S. Northern district, U.S.
2080	41	Laborers and stock breakers	Pig iron	Northern district, U.S.
2081		Laborers and stockers	Pig iron Steel ingots	United States
2083		do	Mixed iron and steel	United States
2054		do	Mixed iron and steel	Their ad Contac
2015		Laborers and stockhouse men Laborers and stock preparers	Pig iron	Northern district, U.S.
2087	9	Laborer and stove cleaner	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S.
2068		Laborer and stove tender	Plo iron	Northern district, U.S.
2099		Laborer and stoveman	Pig iron Mixed iron and steel	Southern district, U.S. United States
2991	_	do	Mixed iron and steel	Interi States
2692	_	do	Mixed from and steel	United States
2093		Laborer and switchman	Mixed from and steel	United States
2095		Laborer and telegraphman	Mixed iron and steel	Culled States
20:46		Laborers and timbermen	Bituminous coal	Linited States
2097	51	do	Iron ore	United States
2099		Laborer and tram-car repairer	Bituminous coal	United States
2100	1	Laborer and tram-road repairer	Bitum: nous coal	United States
2101		Laborers and trammersdo	Irou ore	United States
2103	79	do	Tron ora	I mitail Ctates
27.04	55	Laborers and trappers	Bituminous coal	United States
21005	109		Bituminous coal	United States
210		Laborers and unloaders	Steel ingots.	United States. United States. United States.
2108		Laborer and vessel tender	Steel ingota	United States

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition for	r period.			f workmen nous em- nent,	Man
days in the period.	or daily rate near- est to average	Different	Days of v	ork done.	Earn	ings.	Necessary	Consequent average earnings	gin al nun ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
251	\$2.311	2	95	48	\$220	\$110	0.38	\$581	20
155	1.46	1	59	59	86	86	0.38	226	20
313	1. 671	1	34	34	57	57	0.11	525	20
313	1.43	2	228	114	326	163	0.73	448	20
365	1. 57	12	615	51	969	81	1.68	575	20
313	1.30	1	234	234	327	327	0.75	437	20
168 365	1.474	1	143	143	211	211	0, 85	248	20
313	1.50	1	16	16	24	24	0.04	548	20
155	1. 534	1	41 50	50	63 76	63 76	0.13	481 236	20
313	1.354	1	14	14	19	19	0.32	425	20
251	1. 52	i	48	48	73	73	0.19	282	20
132	1.43	i	14	14	20	20	0.11	189	20
313	1. 424	1 3	97	32	138	46	0.31	- 445	20
251	1.584	1	120	120	190	190	0.48	397	20
313	(a)	2	(a)	(a)	59	30	(a)	(a)	20
313	. 461	2	284	284	132	132	0.91	145	20
313	(a)	3	(a)	(a)	115	38	(a)	(a)	20
313	1.621	3	147	49	239	80	0.47	509	20
313	1.89	2	266	133	504	252	0.85	593	20
231	2.00	1	6	6	12	12	0.02	502	20
48 251	(a)	1111211221	(a)	(a)	21	21	(a)	(a)	20
313	1.50	1	16	16	24	24	0. 66	377	20
313	2.24	1	227 33	227	362	362 37	0.73 0.11	499 702	20
313		1	(a)	17	74 49	49			20
155	(a) 2, 231	1	17	(6)	38	38	(a) 0.11	(a) 346	21
305	L. 48	2	224	112	331	166	0. 61	539	20
313	1, 69	2	13	7	22	11	0.04	530	20
365	1.504	ī	164	164	247	247	0.45	550	20
168	(a)	6	(a)	(a)	1,478	246	(a)	(a)	20
144	1.684	1	51	51	86	8G	0. 35	243	20
181	1.443	. 3	218	73	315	105	1.20	262	20
365	1.57	4	316	79	496	124	0.87	573	2
313		10	282	28	544	54	0.90	604	20
313	1.18	1	244	244	288	288	0.78	369	2
313	1.454	2	392	196	570	285	1.25	455	21
167 365	1.35	1	134	134	181	181	0.80	224 417	2
167	1. 30	1	85 151	85 151	97 196	196	0.23	217	2
365	1.32	i	339	339	447	147	0, 93	481	2
313	1.534	3	67	22	103	34	0. 21	481	2
313	1.454	2	128	64	186	93	0.41	455	29
155	1. 28	1	32	32	41	41	0, 21	109	2
365	1.46	6	997	166	1, 461	244	2.73	535	2
365	1.38	31	1, 317	42	1,820	59	3. 61	504	2
365	1. 55	1	20	20	31	31	0.05	566	2
365	2.114	1 1	324	324	685	685	0.80	772	2
334	1. 21	1	23	23	28	28	0.07	407	2
313	1.68		187 685	187	314	314	0.60	526 524	2
155	1. 671	1 1	39	228 39	1, 147	382	2. 19 0. 25	306	2
313	1.13	1 1	39	39	77 35	35	0. 10	353	2
313	1.77	î	306	306	542	542	0. 10	554	2
313	1. 55	i	220	220	342	342	0.70	487	2
313	(4)	1	(a)	(a)	214	214	(a)	(a)	2
313	1. 331	2	316	158	422	211	1.01	418	2
313	1.19	1	16	16	19	19	0. 05	372	1 2
313	1.34	1 1	75	75	101	101	0.24	422	1 2
313	(a)	1	(a)	(a)	43	42	(a)	(a)	2
313	1.661	1	21	21	35	35	0.07	522	2
313	1.40	1	10	10	14	14	0.03	438 608	2
313	1.041	2	157	79	305	153	0.50		2
313	1.00	1 2	68 223	112	184	68 92	0. 22	313 258	2
313	1.494	11	382	33	542	49	0.71	469	1 6
144	2,094		219	110	459	230	1.15 1.52	302	2
313	1. 45	1 1	209	200	304	304	0, 67	455	1 2

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

[Back line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

Mar	Es-		16.5	
gin- al num- ber.	lish- ment num-	Occupation.	Industry.	Locality.
	ber.			part of L
2109	26	Laborers and watchmen	Muck bar iron	United States
2110 2111	72	Laborers and water tenders	Pig iron	Northern district U.S.
2112	103	do	Pig iron	United States
2113	-	do	Dicer blooms	United States United States
2115	10	Laborers and weighmen	Mixed iron and steel Pig iron	Northern district, U.S.
2110	2	do	Steel ingota	United States
2117		do	Mixed fron and steel	United States Great Britain
2119	7	Ladle cleaners	Mixed iron and steel	United States
2120	-	do	Steel ingots	Continent of Europe
2121 2123	_	Ladle daubers	Steel ingots	Great Britain
2123	2	Ladle liners	Steel ingota	United States
2124	7	do	Steel ingots	United States United States
2125 2126	7 2	Ladle liner and ladle packer	Steel ingots	United States
2127	2	Ladle liners and pushers Ladle liners and vessel cinders	Steel ingots	United States
2128	3	Ladle liner and vessel remairer	Steel ingots	United States United States United States United States
2129	7	Ladle liner and vesselman Ladle liners' helpers	Steel ingots	United States
2131	7	Ladio racker	Steel ingots	United States
2132	1	Ladle stoppers	Steel ingots	United States
2133 2134	37	Ladle stoppersdo Ladlemen	Pig iron	Great Britain
2135	1	d0	Pig iron	United States
2136	5	do	Steel ingots	United States
2137 2138		do	Steel ingots	Continent of Europe
2139		do	Steel ingots	Continent of Europe
2140	-	do Ladleman and mouldman	Mixed iron and steel	United States
2143	1	Ladleman and nit cleaner	Steel ingots	United States
2143	1	Ladleman and pit cleaner Ladleman and runner Ladlemen and scrap cleaners	Steel ingots	United States
2144 2145	1 5	Ladlemen and scrap cleaners	Steel ingots	United States
2146	5	Ladlemen's helpers Ladlemen's helper and pitmen's helper Lampmen	Steel ingota	United States
2147	_	Lampmen	Pig iron	Great Britain
2148 2149	148	do	Bituminous coal Bituminous coal	Dominion of Canada Great Britain
2150	56	Landers	Iron ore	United States
2101	59		Iron ore	United States
2152 2153	61 72	do	Iron ore	United States
2154	56	Lander and miner	Tron ore	United States
2155 2156	-	Lathemen	alixed from and steel	United States
2157		Tar area	Mixed iron and steel Mixed iron and steel	Great Britain United States
2158		Lay-overs and puncher	Mixed from and steel	United States
2159	13	Levellers	Coke	Libited States
2160	19 28	do	Coke	United States
2162		do	Coke	Londing of Europe
2165	_	Lever men	Mixed iron and steel Steel billets	United States United States
2165		Lever men	Mixed from and steel	United States
2160	_		Mixed iron and steel	Continent of Europe.
2107	36	Liftmen do Lighter-np	Pig iron Steel incots.	Great Britain United States
2199	1	Lighter-np.	Steel li lleta	United States
2170	56	LICHEDAD	1.16 1LOU	Northern district II St.
2171 2172	772	Lime wheelers. Limestone breakers	Mixed fron and steel Pig iron	Continent of Europe Northern district, U.S.
2173		Limestone breakers	Pig ima	Continent of Europa
2174		Limestone wheelers	Pig:ron	Great Britain
	7	I mustana — haula aa	Sterl inguta	Cnited States

Work-	Actual daily earnings,		Actual c	ondition fo	or period.		had conti	f workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Earn	inge.	Necessary	Consequent average earnings	gin- al susi- ber.
	carnings.	employes.	Total.	Average.	Total.	Average.	ешриуса.	per em- ployé.	
312 365 365 365 261 265 27 78 312 230 230 230 230 230 230 230 230 230 23	daily	employés. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Total. 87 267 298 48 27 16 118 1170 58 256 91 247 (a) 914 198 135 157 179 443 57 1, 408 130 96 654 (a) 91 179 177 1, 408 130 130 130 130 130 130 130 130 130 130	27 297 298 279 298 279 298 298 298 299 298 299 299 299 299 29	Total. #855 453 884 884 423 1877 2285 330 9:28 633 161 2204 2, 323 850 417 816 82 1, 370 821 1, 370 821 1, 370 223 822 527 1, 709 209 209 201 221 192 862 433 8607 223 87 223 87 223 87 223 88 223 87 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 223 88 224 88 406	## Verage. ## 965 ## 588 ## 43 ## 22 ## 187 ## 188 ## 300 ## 164 ## 165 ## 177 ## 158 ## 300 ## 177 ## 158 ## 301 ## 177 ## 158 ## 321 ## 177 ## 192 ## 193	employés. 0. 12 0. 73 0. 82 0. 90 0. 94 0. 81 1. 21 1	per em-	2100 2110 2111 2112 2113 2114 2115 2116 2117 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2128 2128 2128 2128 2128 2128
105 105 105 105 105 105 105 105 105 105	1.00 1.74 1.004 1.014 1.015 1.88 .84 2.273 2.305 1.65 1.37 7.50 2.30 (a) 7.735 1.35 1.00 2.80 (a) 7.75 1.50 2.80 (a)	2 18 1 1 2 4 5 5 1 1 1 2 5 6 8 8 4 4 3 1 1 1 1 5 5 4 5 4 2 2 3 3 3 3 3 3	451 109 8, 748 214 535 186 221 37 1, 775 1, 313 207 304 562 463 (a) 2, 375 2, 375 320 492 316 1, 162 365 549 1, 162 365 549 1, 162 365 1, 162 1, 16	58 202 214 208 47 44 48 263 104 201 201 80 (4) 92 207 80 164 223 186 233 123 125 125 136 141	110 6,521 864 103 305 325 4,042 3,028 4,042 3,028 64,202 1,086 6,202 1,351 674 92 685 642 1,121 200 452 200 452	855 3672 228 432 26 61 32 404 605 170 417 440 213 1, 044 1, 046 1, 046	1.44 0.70 11.97 0.68 1.71 2.88 1.41 0.25 5.67 4.19 0.68 1.80 2.29 (a) 7.59 (a) 7.59 3.52 1.71 2.06 4.01 4	2832 166 545 223 2505 27 214 131 713 721 514 446 446 446 446 446 429 202 202 7723 545 60 113 373 18	2151 2158 2158 2155 2155 2156 2156 2156 2160 2161 2162 2163 2164 2165 2165 2166 2167 2168 2179 2173 2173 2173 2173

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

dar- rin- al um- er.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2177		Lining proparers	Steel ingota	Continent of Europe
178	-	Link welders	Mixed iron and steel	United States
179 180		Loadersdo	Steel blooms Mixed iron and steel	United States
181	_	do	Mixed iron and steel	Continent of Europe
182		do	Mixed iron and steel Mixed iron and steel	Great Britain
183 184		do	Mixed iron and steel.	Great Britain
185	26	do	Bituminous coal	United States
186 187	156	do	Bituminous coal	Continent of Europe Continent of Europe
188	6	do	Coke	United States
189	28	do	Coke	Continent of Europe
190	12	do	Coke	United States United States United States
2192	46	do	Iron ore	United States
2193	59 26	Loader and teamster	Iron ore Bituminous coal	United States Upited States
2194	26	Loaders and timbermen	Bituminous coal	United States
2196	26	Loader and trapper.	Bituminous coal	United States
2197 2198	26	Londers and weighmen	Mixed iron and steel	United States Great Britain
2199	7	Loam mixers	Steel ingots	United States
2200	_	Locksmiths	Mixed fron and steel	Great Britain
2201 2202		Looksmiths	Mixed iron and steel Mixed iron and steel	Continent of Europe
2203	10	Machinists	Pig tron	Continent of Europe Northern district, U.S. Northern district, U.S. Northern district, U.S.
2204	32 42	do	Pig iron	Northern district, U.S.
2205	58	do	Pig iron	Northern district, U.S.
2207	83	do	Pig iron	Northern district, U.S.
2208 2209	101	do	Pig iron	Southern district, U.S. Southern district, U.S. Southern district, U.S.
2210	109	do	Pig iron	Southern district, U.S.
2211	7	dodo	Muck bar iron	United States United States
2212 2213	26	do	Muck bar iron	United States
2214	9	do	Finished bar iron	United States
2215 2216	1	do	Steel ingota	United States
2217		do	Steel ingota	Continent of Europe
2218	-	do	Steel billets	United States
2219 2220		do	Steel blooms	United States
2221	_	do	Steel rails	Continent of Europe
2222	_	do	Steel rails	United States
2221		do	Mixed iron and steel	United States
2225	-	do	Mixed iron and steel	United States
2226		do	Mixed iron and steel Mixed iron and steel	United States
2224	_	do	Mixed iron and steel	United States
2229 2230	-	do	Mixed iron and steel Mixed iron and steel	United States
2230		do	Mixed iron and steel	Continent of Europe
2232	7.5	do	Bituminous coal	United States
2233 2234	148	do	Bituminous coal	Continent of Europe
2235		do	Coke	Continent of Europe
2236	42	do	Iron ore	United States
2237 2238	72	do	Iron ore	United States
2239		Machinist and puncher	Mixed iron and steel	United States
2240	_	Machinists' apprentices	Pig iron	Continent of Europe
2241		do	Steel blooms	United States
2243	10		l'ig iron	

Vork- ear			Actual c	ondition fo	r period.		Condition i had contin ploys	nuous em-	Man
days rate of the eriod.	e Diff	fferent	Days of w	ork done.	Earr	ings.	Necessary	Consequent average earnings	gin al nun ber
eas	emp	ployés.	Total.	Average.	Total.	Average.	employéa.	per em- ployé.	
_	24 3 54 35 5 57 0 7 7 1 45 8 54 4 5 5 5 7 7 1 1 2 5 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 86 612 7 6 67 20 11 1 27 12 2 1 1 5 1 1 2 2 1 1 5 1 1 1 1 4 2 4 1 2 6 1 2 3 1 5 1 1 1 1 4 2 4 1 2 6 1 2 3 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Total. 59 (a) 3, 330 2, 779 (a) 481 96 737 2, 497 910 481 96 737 2, 363 814 4, 745 78 169 143 26 (a) 206 (a) 206 (a) 208 1, 922 5, 892 209 894 928 894 340 306 144 154 154 46 156 169 659 659 659 1, 620 307 698 4, 001 2, 443 311 31, 346 643 311 313 336 653 30 1, 534	(a) 78 50 222 (a) 107 (a) 37 46 44 96 77 139 411 216 142 26 (a) 160 305 178 340 366 (a) 160 54 47 132 135 135 143 144 (a) 54 47 151 (a) 132 135 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (a) 54 178 143 144 (b) 54 178 143 144 (a) 54 178 143 144 (b) 54 178 143 144 140 154 145 145 145 145 145 145 145 145 145	\$37 1, 933 1, 110 1, 511 1, 434 4, 650 632 274 873 1, 473 332 1, 473 332 1, 473 332 1, 473 332 1, 473 1, 308 42 2, 118 44 402 2, 118 1, 308 1, 567 1, 734 4, 567 1, 734 4, 568 8, 568 8, 568 1, 558 1,	#19 #19 #19 #19 #19 #19 #19 #19 #19 #19	(a) 2.70 36.20 8.88 (a) 4.10 (a) 7.08 11.81 9.25 6.47 2.60 15.18 0.25 0.46 0.90 (a) 0.90 (a) 12.84 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95		2111 2111 2111 2111 2111 2111 2111 211
313 313 77 78 202 144 251 77 78 313 313 313 168 155 313 313 313 313 313 313 52 865	83614 06614 97532752 923844	3 4 2 2 2 5 5 10 9 2 2 8 2 7 12 2 10 10 5 3 2 2 1	36 138 643 446 81 629 1,620 307 659 1,620 1,520 1,514 (a) 1,346 2,413 331 653 52 300	12 40 54 74 81 210 132 135 61 68 78 143 244 110 (a) 135 241 62 11 62 11 52 11	82 368 1, 453 320 1, 540 1, 542 1, 584 8, 855 8, 899 7, 101 1, 495 260 273 1, 495 260 273 1, 137 261 273 273 273 273 273 273 273 273 273 273	27 92 121 53 40 473 317 296 41 173 317 173 317 524 271 228 351 322 150 52 21 150 52 21 30	0. 12 0. 50 5. 80 1. 8. 11 4. 58 6. 47 8. 99 8. 68 7. 78 8. 99 8. 77 (a) 8. 99 12. 78 13. 99 14. 28 15. 10 16. 10	(a)	713 7729 7707 555 199 4456 346 552 43 897 895 6805 6412 749 66 588 542 665 542

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.
 b Number of employée not given.

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

(Bach line above the total of an occupation in an establishment. In a like escupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

far-	Es-			
al um-	lish- ment num- ber.	Occupation.	Industry.	Locality.
2244	42	Washington and the	Distant.	North and Material IV C
2245	1	Machinists' helpers—concluded	Pig iron	Northern district, U.S. United States
2246	-	do	Steel blooms	United States
2247 2248		do	Steel blooms	United States
2249	_	do	Mixed iron and steel	United States
1251		do	Mixed iron and steel Mixed iron and steel	United States
2252	_	do	Mixed fron and steel	United States
2252 2253 2254	1 1	Machinists' helper and oiler	Iron ore	United States
2255	_	Mail boys	Steel billeta	United States
2256 2257	1 1	Manager	Iron ore	United States
2258	2	do	Steel ingots	United States
2259 2260	7	Manganese heater and scrapman	Steel ingots	United States
2261	2	Manganese heaters' helpers	Steel ingota	United States
2262 2263	7	Morkeys	Steel ingots	United States Great Britain
2264		Markersdo	Mixed iron and steel	Continent of Europe
2265 2266	156	do	Bituminous coal	Continent of Europe
2266	10	Masonsdo	Pig iron	Northern district, U.S.
2268	42	do	Pig iron	Northern district, U.S.
2269 2270	58 67	do	Pig iron	Northern district, U.S.
2271 2272	101	do	Pig iron	Continent of Europe. Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S. Southern district, U.S. Southern district, U.S. Southern district, U.S.
2272	100	do	Pig iron	Southern district, U. S. Great Britain
2273 2274	37	do	Pig iron	Great Britain
2275 2276	7 9	do	Muck bar iron	United States
2277	26	do	Mack bar iron	United States
2278 2279	8	do	Finished bar iron Steel ingots	United States
2280	-	do	Steel ingots	Continent of Europe
2281 2282		dodo	Steel hillets	Continent of Europe United States
2283	_	do	Mixed iron and steel	United States
2284 2285		do	Mixed fron and steel Mixed fron and steel	United States United States
2286		do	Mixed iron and steel	United States
2287 2288		do	Mixed iron and steel Mixed iron and steel	United States
2289		do	Mixed iron and steel	Continent of Europe Continent of Europe Continent of Europe
2290 2291	_	do	Mixed iron and steel Mixed iron and steel	Great Britain
2292	_	do	Mixed iron and steel	Great Britain
2293 2294	96	do	Bituminous coal	United States
2295		do	Dituminous coal	Unite I States Dominion of Canada
2296 2297	148	do	Bituminous coal	Continent of Europe
2298	170	do	Bitumicons coal	Great Britain
2299 2300	13	dn	Coke	United States
201	28	do	Coke	United States
2302 2303	29	do	Coke	United Steles
2304	12	do		United States
2505	42	do	Iron ore	United States
2306	72 80	Mason and miner		United States
2308	46	Masons and painters Masons belpers	Iron ore	United States
2310	10	Masons' helpers	Pig iron	Northern district, U.S. Northern district, U.S.

Work-	Actual daily earnings,		Actual (condition fo	or period.		had conti	if workmen ' nnous em- nent.	Mar-
ing days in the period.	or daily rate near est to average	Different employée.	Days of v	rork done.	Earn	ings.	Necessary employés.	Consequent average earnings	gin- num- ber-
	daily earnings.	J	Total	Average.	Total.	Average.	employes.	per em- ployé.	
365	\$1.00	2	815	188	\$820	\$163	0. 26	\$378	224
813 144	1.25 1.834	4 2	83 287	144	41 827	10 264	0.11 3.00	389 264	224 224
251	i. 44	1	45	l 'ii l	63	16	0.19	303	224
313	1.50	14	601	43	903	65	1. 92	470	224
168	1.73	1	166	166	291	291	0.00	295	224
155 313	1.47	2 3	144 936	72 312	109 1, 376	55 459	0.93 2.99	117 450	225
313	l on	5	823	165	7,510	148	2.02	282	225
318	1.30	ĭ	312	312	406	406	1.00	407	225
313	1.81	1	29	29	38	38	0.09	410	225
202 217	. 43	3	217	109	93	47	1.07	87	223
318	2.50	1 2	219 292	219 146	547 420	547 210	1.01 0.93	542 450	225
132	1.44 3.60		217	86	1, 234	309	2.00	- 475	2:15
230	5. 204	ž	343 389	195	1, 234 2, 0?5	1,013	1. C9	1, 197	2:23
313	1.47	1	149	149	220	220	0.48	462	220
132 2 30	2.64	2	218 394	100	576 1, 1 09	288 370	1.65	349 647	220
156	2 813	5	625	181 125	1, 627	325	1.71 4.00	406	226
98		12	473	39	101	8	5.14	20	226
77	. 52	3	83	41	43	22	1.07	40	226
318	3. 124	10	276	23	862	86	0.88	978	220
318 313	3.48 2.52	2	376 383	63 96	1, 309 965	218 241	1. 20 1. 22	1, 090 789	226 226
	1.90	i	814	314	596	596	1.00	594	228
318	3.50	5	1 43	9	150	80	0.14	1,092	227
184	2. 651	2 1 3	26	13	95	48	0.14	672	1 6097
313	3.00	, 1	1	1 1		56	0.00 2.77	939	277
10	.77}	: 3 · 5	216 889	72 78	167 273	54	4. 99	60 55	227
153	3.78	. 3	168	84	631	316	1.09	583	227
313	3. 76 6. 37	1	259	84 259 222 299	1, 650	1, 660	0.88	1,994	227
313	L 16	1	223	227	924	924	0.71	1, 303	227
299 313	2.75	1 8	290 119	779	822 416	823 52	1.00 0.38	1, 094	227
313	. 78	1 1	229	15 57 22	180	45	2.97	61	220
27	. nel	4 3	66	22	59	45 20	2.44	' 24	228
203	. 3.581	4	418	105	1, 498	875	2.07	724	228
313 313	3.48 2.20	. 3	821 912	161 83	1, 110 2, 930	555 266	1.03 2.91	1, 082 1, 006	228
158	3.53	11	23	8	381	27	0.14	1,000	228
318	1.35	1	127	127	171	171	0.41	421	228
313	3.72	3	281	94	1, 045	348 133	0.90	1, 164	228
313	. 56	9	2, 139 817	238	1, 199 180	133	6, 83 3, 45	175	228
9 2 313	. 52	5 15	8, 570	238	1, 830	123	11.41	52 162	228 229
48	. 75	5	257	51	193	30	5.36	36	229
53	. 711	9	493	55	353	39	9. 29	. 38	229
313	2.00	1 1	6	3	18	9 7	0.02	939	229
318 318	2. 334	· •	3	1 1	6	ا و ا	0. 01 0. 01	730 704	229 229
312	2.00	i	310	310	620	620	0.99	626	220
77	. 82	1 1	l ii	6	9	5	0.14	63	2:29
91	1.404	1 7	76	76	110	110	0.84	132	229
313 313	2.68	1 7	794 31	113	2, 113 84	303 28	2. 54 0. 10	833 848	229
313	3. 50	i	19	19	66	66	0.06	1, 087	230
313	3. 50	1	32	32	111	111	0. 10	1,088	230
· 26 5	. 601	1 1	18	18	13	13	0.05	264	230
313	3. 73	2	15 51		56 101	28 51	0.05	1, 169 G20	230
31B 313	1.98 3.83		87	26 15	333	56	0. 16 0. 28	1, 198	230
158	. 75	1	147	147	110	110	0. 93	118	530
313	2 54	9	809	90	2,055	228	2.58	795	230
365	1.984	1 1	286	296	567	567	0.78	724	::20

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

[Rack line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentator the establishment was obtained. In referring from this table to those on production by means of

2213 9 do	far- gin- al um- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2213 9 do	2311	36	Masons' helpers—concluded	Pig iron	Great Britain
12317		37	do	Pig iron	Great Britain
12317	2313	9	do	Muck bar iron	United States
12317	2815		do	Steel ingets	United States
	2316	-	do	Steel ingots	Continent of Europe
Mixed from and steel United States	2317	-	do	Steel ingots	Continent of Europe
Mixed iron and steel. United States	2318		do	Steel billets	United States
Mixed from and steel.	2320		do		United States
Mixed from and steel.	2321		do		United States
	2322	_	do	Mixed iron and steel	Continent of Europe
			do		Continent of Europe
			do		Continent of Europe
148			do		Great Britain
Steel ingots	2327		do	Bituminous coal	Dominion of Canada
101 Master machinists	2328	156	do		Continent of Europe
Steel blooms		101	Master machinists	Dig iron	Southern district IT S
Master masons Steel ingots United States	2331		do	Steel blooms	United States
Master mechanics Steel ingots United States	2332		Master masons	Pig iron	Northern district, U.S.
Matchers	2333		Master mechanics	Steel ingots	United States
Matchers	2335	-	do	Mired iron and steel	United States
Mauler and puncher	2336		Matchera		United States
Mixed iron and steel Great Britain		-	Mauler and puncher	Mixed iron and steel	United States
2341 2			Measurers		Great Britain
2341 2		9	Wachanias	Dig iron	Northern district II S
2342 7	2341	2	do	Steel ingots	United States
2344 156	2342	7	do	Steel ingota	United States
2345 170		158	do	Bituminous coal	United States
2349 5			do	Bitaminous coal	Great Britain
2349 5	2346	2	Mechanics' helper	Steel iugots	United States
2349 5	2347		Mechanics' shop boy	Bituminous coal	
2350	2240		Aleiters	Steel ingots	United States
2351	2350	_	do	Steel ingota	Continent of Europe
2354		_	do	Mixed iron and steel	United States
2354 5 Melter and melters' helper			do		Continent of Europe
Mailer and scrapman Steel ingots United States		5	Multer and melters' halner		United States
2356 5	2355		Melter and scrapman	Steel ingota	United States
2358 36 Messengers	2356	5	Melters helpers	Steel ingota	United States
		20	do		United States
2360		30	do do	Wired iron and steel	Continent of Europe
2362 9 Metal breakers Pig iron Northern district, U. 2363 17	2360	-	do		Continent of Europe
2364		-	do		Great Britain
2365			Metal breakers	Pig iron	Northern district, U. S.
2365		1.	do	Steel blooms	United States
2366 9 Metal carriers Pig iron Northern district, U.		_	do	Mixed iron and steel	United States
2369 do Pig tron Northern district, U. 2269 do Pig tron Great Britain 2370 do Mixed iron and steel Continent of Europe. 2371 9 Metal carrier and ore breaker. Pig tron. Northern district, U. 2 2372 7 Metal stocker. Steel ingots. United States. 2373 7 Metal washer. Steel ingots. United States. 2374 7 Metal washer. Steel ingots. United States. 2375 8 Metal wheelers Finished bar iron United States. 2376 2 do Steel ingots. United States.			Metal carriers	Pig iron	Northarn district IT &
2369			do	Pig iron	Northern district, U. S.
2370		96	do	Pig iron	Great Britain
2372 7 Metal stockers and scrap handlers Steel ingots. United States. 2373 7 Metal stockers and scrap handlers Steel ingots. United States. 2374 7 Metal washer. Steel ingots. United States. 2375 8 Metal wheelers Finished bar iron United States. 2376 2	2370	-		Mixed iron and steel	Continent of Europe
2373 7 Metal stockers and scrap handlers Steel ingots United States	2371		Metal carrier and ore breaker	Pig iron	Northern district, U.S.
7 Metal washer	2377		Maral stockers and seems bandle	Steel ingots	United States
2310 2 do Steel ingots United States	2374		Metal washer	Steel invote	United States
23.6 2 do Steel ingots United States	2375		Metal whoelers	Finished bar fron	United States
2377 7 United States	2376 2377	7	do	Steel ingots	United States

Work.	Actual daily carnings,		Actual o	condition for period. Condition if work had continuous ployment.			Mar-		
days in the	or daily rate near- cet to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num- ber.
period.	daily carnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
73 78	\$0.51	5 11	379 863	76 78	\$193 471	\$39 43	4.86 11.06	\$40 43	2211 2312
313	1. 12	1	191	191	216	210	0.61	354	2313
813	1.71	2	314	157	537	249	1.00	535	2314
313 77	1.511	8 2	449 122	56 61	681 26	85 13	1. 43 1. 58	475 16	2315 2316
27	.395	4	81	20 33	33	8	3.00	11	2317
202 318	1.50	10 21	328 1, 479	33 70	492 2, 106	49 100	1. 62 4. 73	303 446	2318 2319
155	1.55	3	346	115	536	179	2. 23	240	23:20
313	1. 50	1	65 2, 889	65 272	98	98 51	0. 21 9. 23	472 71	2321
318 92	. 224	18 5	2, 009	67	657 143	29	3.63	39	2323
313	. 201	13	2, 288	176	474	36	7. 31	65	2324
48 53	. 55	6 7	271 400	45 57	148 220	25 31	5. 65 7. 55	26 29	2325 2326
313	1.20	1	308	308	360	360	0. 98	366	2327
313	1.30	1 1	708	114	1, 039	148	0. 09 2. 55	44 408	2328
184	4. 07	2	167	84	080	340	0. 91	749	2330
251	3.32 4.58	2	341	171	1, 132	566	1. 35	833	2331
313 365	6.58	1 7 2 2 2 1	43 819	22 319	197 2, 100	90 2, 100	0. 14 0. 87	1, 434 2, 403	2333
144	2. 5u	1	182	182	637	637	1. 26 0. 69	504	2334
313 313	3. 26 1. 80	1 12	215 2,416	215 201	701 4.344	701 362	0.69 7.73	1, 021 563	2335 2336
155	1.421	í	40	40	57	57	0. 26	2:1	2337
53 365	.57	1 1 1 2 2 3	150 294	75 294	85 153	43 153	2. 83 0. 81	30 190	2338
313	1 2.00	l i	1 71	71	143	143	0.23	630	2340
144	2. 294 1. 77	2	813	157	719	360	12.17 2.86	331	2341
251 313	2.66	1 1	592 5	197	1, 047 13	349 13	2.86 0.02	444 814	2343
77	1.914	1 1 2 1	75	75	144	144	0.97	148	2344
144	1.10	2	162 104	81 104	179 158	90 158	1.78 0.72	101 219	2345 2346
91	. 534	1	74	104 74	38	38	0. 81	47	2347
313 132	3. 334 3. 03	8	279 135	93 135	930 409	\$10 409	0. 89 1. 02	1, 043 400	2348 2349
78	.814	22	1, 386	63	1, 132	51	17. 76	64	2350
313	(a) 1.11	4	(a)	(a) 284	8, 497	874	(a) 2,78	(a) 847	2351
313 53	(a)	8	(a)	(a)	915 271	315 45	(a)	(4)	2352
132	2, 283		119	119	272	272	0.90	302	2354
313 132	2.54 1.81	1 2	50 142	50 71	127 257	127 129	0. 16 1. 08	795 239	2355 2356
313	(a)	11	(a)	(a)	5, 024	1 457	(a)	(a)	2357
91 313	. 28	1	91 332	91 332	25 201	25 201	1.00 1.06	25 189	2358 2359
313	17	1 1	304	304	53	53	0.97	55	.2360
48	.17	1 2	96	48	2, 308	15	2.00	15	2361
365 286	1. 94 ± 2. 00	8 5	1, 186 750	148 150	2, 308 1, 475	289 295	3.25 2.62	710 562	2363
230	1.90	15	1, 785	119	3, 327	222	7.76	429	2364
313 365	1. 834	15 19	850 1, 274	57 67	1,560 3,720	104 196	2.72 3.50	574 1,066	2385
181	3.01	8	886	111	2,665	333	4.90	544	2367
313 135	(a) 1, 30	(b) 19	(a) 2,565	(a) 135	16,093 3,300	(ð) 175	a) 19.00	(s) 175	2368 2369
133	. 31	1 1	2, 303	69	21	21	0.90	23	2370
365	2, 611	l į	151	151	395	395	0.41	955	2371
230	2. 50 2. 78	1 2	217	109	15 603	15 302	0. 03 0. 94	575 639	2473
230	1.50	l i	6	6	9	9	0.03	845	2874
299 132	1.70 2.33	1 13	277 977	277 75	471 2, 280	471 175	0. 93 7. 40	508 308	2375
230	3.48	10	1, 673	167	5, 819	582	7. 27	028	2377

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

b Number of employee not given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like econnation the facts for the periods are of equal length. The establishment numbers relate to the cost of predection presentation the establishment was obtained. In referring from this table to these on production by means of

ar- n- l m- et.	Es- tab- liah- ment num- bar.	Occupation.	Industry.	Locality.
78	7 7	Metal wheeler and puller-down Metal wheelers and scrap stockers	Steel ingots	United States United States
179 180 181		Metal worker	Steel blooms	United States United States
182		Metal workers' helpers	Steel blooms	United States.
83	7	Millwrights.	Muck bar iron	United States
184	26	do	Muck bar iron	United States
185	8	do	Finished bar iron	United States
186 187		do	Mixed iron and steel Mixed iron and steel	United States United States
188		do	Mixed iron and steel	United States
189	_	do	Mixed iron and steel	United States
390	_	do	Mixed iron and steel	Great Britain
168	$\overline{}$	Millwrights, assistant	Mixed iron and steel	Great Britain
192 193		do do	Mixed iron and steel	United States United States
394		do Millwrights' laborers	Mixed iron and steel Mixed iron and steel	Great Britain
394 395	18	Mine bosses	Bituminous coal	United States
396	26	do	Bituminous coal	United States
397 398	107	do	Bituminous coal	United States Dominion of Canada
399	148 156	do	Bituminous coal	Continent of Europe
100	1	do	Iron ore	United States
401	12	do	Iron ore	United States
402	41	do	Iron ore	United States
103	48	do	Iron ore	United States
404 405	51	do	Iron ore	United States
406	64	do	Iron ore	United States
407	69	do	Iron ore	United States
408 409	72	Mine bosses, assistant	Iron ore Bituminous coal	United States Dominion of Canada
410	148 156	da	Bituminous coal	Continent of Europe
411	51	Mine boss, chief	Trop ore	United States
412	156	Mine boss, chief	Bituminous coal	Continent of Europe
413	72	Mine runner	Iron ore	United States
414	18 55	do	Bituminous coal	United States United States
416	96	do	Bituminous coal	United States
416	107	do	Bituminous coal	United States
418	109	do	Bituminous coal	United States
419		do	Bituminous coal	United States
421		do	Bituminous coal	United States.
422		do	Bituminous coal	United States
423 424		do	Bituminous coal	United States. United States Dominion of Canada. Continent of Europe.
425	156	do	Bituminous coal	Continent of Europe
426	170	do	Bituminous coal	Great Britain
427 428	1	do	Iron ore	United States
428		ob	Iron ore	United States
430		do	Iron ore	United States
431	43	do	Iron ore	United States
4.32	44	do	Iron ore	United States
433	45	do	Iron ore	United States
434	48	do	Iron ore	United States
430	51	do	Iron ore	United States
2437	56	do	Iron ore	United States
2438		do	Iron ore	United States
2439	61	do	Iron ore	United States
2441	60	do	Iron ore	United States
4442	72	do	Iron ore	United States
2443	76	do	Iron ore	Continent of Europe.
2145	80	dodo	Iron ore	Continent of Europe Continent of Europe



one establishment cannot be compared with those for another (except as to daily rate of pay), unless then, Tab os I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	condition fo	r period.		had contin	f workmen nuous em- nent.	Man
days in the period.	or daily rate near- est to average	Different	Days of v	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin al pun ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
230 230 231 231 231 231 231 231 231 231 231 231	1. 25§ 1. 15 1. 25 1. 25 1. 00§ 1. 00§ 1. 00§ 1. 00§	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	33 256 170 121 125 125 127 126 127 1	33 85 170 121 127 148 139 300 430 777 182 137 121 121 121 121 121 121 121 121 121 12	\$71 558 618 1.123 1.081 1.123 1.081 1.123 1.422 474 474 475 513 950 1.107 578 420 717 477 477 477 477 477 477 477 570 1.200 1.500 1.500 640 660 960 420 2.529 1.310 30 30 558 615 7,025 58,013 30,305 58,613	#71 186 551 3052 541 78 309 1, 123 1, 429 247 475 554 193 420 359 420 359 660 210 660 960 210 660 960 210 672 1, 200 1, 200	0. 14 1. 12 0. 64 1. 17 0. 68 1. 57 0. 68 1. 57 0. 62 1. 60 1. 13 0. 44 2. 51 1. 46 1. 10 1. 10 0. 10 1. 10 0. 10	\$495 5011 754 754 730 690 255 698 1, 199 1, 040 517 655 538 139 602 838 1, 200 625 540 722 960 210 625 666 61 421 117 6668 (a) (a) (a) (a) (a) (a) (a) (a) (a) (a)	25 11 11 11 11 11 11 11 11 11 11 11 11 11

a Paid by the quantity. The daily rate of pay and days of work done cannot be given. b Number of employes not given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like ecompation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentative the establishment was obtained. In referring from this table to those on production by means of

dar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2446	148	Miners and miners' helpers	Bituminous coal	Dominion of Canada
2448	45	Miners and ore cleaners	Iron ore	United States
2449	64 72	Miners and pit bosses	Iron ore	United States
2450	-	Miner and propman	Iron ore	United States
2451 2452	107	Miners and pumpmendo	Bituminous coal Bituminous coal	United States
2453	72	do	Iron ore	United States
2454	109	Miners and rockmen	Bituminous coal	United States
2455	109	Miners and shifters	Bituminous coal Bituminous coal	United States United States
2456 2457		Miners and shovellers	Bituminous coal	United States
2458	45	Miner and stableman	Iron ore	United States
2450	72	Miner and teamster	Iron ore	United States Dominion of Canada
2460 2461	148	Miners and timbermen	Bituminous coal	United States
2462	- 30	Miners and tracklayers	Rituminous coal	United States
2463	-	Miner and tram-road repairer	Bituminous coal	United States
2464 2465	_	Miners and trappers	Bituminous coal	United States United States
2466	42	Miner and wagonmaker	Iron ore	United States
2467	42	Miner and watchman	Iron ore	United States
2468 2469	107	Miner and water boy	Bituminous coal	United States
2470	41	Miner and weighman	Iron ore	United States
2471	148	Miners' helpers	Iron ore	Dominion of Canada
2472	156	do	Bituminous coal	Continent of Europe
2473	45 72	do	Iron ore	United States United States
2475	7	Mixers	Muck bar iron	United States
2476	_	Mixers and mixers' helpers	Mixed iron and steel	Continent of Europe
2477 2478	6	Mortar man	Steel blooms	United States United States
2479	7	Mould capper	Steel ingots	United States
2480	7	Mould cappers and pushers	Steel ingots	United States
2481 2482	1	Mould cooler and stocker	Steel ingota	United States United States
2483	7	Mould setters	Steel ingots	United States
2484	_	do	Steel ingots	Continent of Europe Continent of Europe Continent of Europe
2485 2486	_	Mould setters and steel pourers	Steel ingots	Continent of Europe
2487	7	Mould swingers	Steel ingots	United States
2488		Mould awingers do Mould washers	Steel ingota	Continent of Europe
2489	7	Moniders	Steel ingota	United States.
2491	10	do	Pig iron	Northern district, U.S.
2492	41	do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S.
2493	103	do	Pig iron	Northern district, U.S. Southern district, U.S.
2495	103	do	Pig iron	Southern district, U.S.
2496	36	do	Pig iron	Great Britain
2497	37	do	Pig iron	Great Britain
2498		do	Pig iron Mixed iron and steel	Great Britain Continent of Europe
2500	1	do	Mixed iron and steel	Great Britain
2501	42	Moulder and stocker	Iron ore	United States
2502	103	Moulder and stocker	Pig iron	Northern district, U.S.
2504	42		Iron ore	Northern district, U.S. United States
2505	1	Mouldmen	Steel in rota	United States
2506 2507	1	Mouldman and scrap cleaner	Steel ingots	United States
2508		Navvies	Pig iron	Great Britain
2509	42	Nozzlemen	Iron ore	United States
2510	37	Number taker	Pig fron	Great Britain
2511		Numberers	Mixed iron and steel	United States
2513		Nut tappers	Mixed iron and steel.	United States



one tritablishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual c	ondition for	period.		had conting ployn	nous em-	Mar
ing days in the period.	or daily rate near- est to average	Different	Days of w	ork done.	Earn	ings.	Necessary	Consequent average earnings	gin al nun ber
	daily carnings.	employés.	Total.	Average.	Total.	Average.	employes.	per em- ployé.	
313	\$1.64	8	1,682	210	\$2,750	\$315	5. 37	\$513	24
313	1.56	8 4 1	378	95	590	148	1. 21 0. 53	489	24
155	. 67 2. 251	1	85 851	85 170	1, 917	57 383	2.72	104 705	24
313	(a)	5	(a)	(a)	245	245	(a)	(a)	24
313	(a)	1	(a)	(a)	174	174	(a)	(a)	24
365	(a)	1	(a)	(a)	324	324	(a)	(a)	24
313	1.99	2	547	274	1,089	545	1.75	623	24
313	(a)	12	(a)	(a)	1,590	133	(a)	(a)	24
313 365	(a)	1 1	(a)	(a)	544 476	514 476	(a) (a)	(a) (a)	24
313	(a)	2	(a) (a)	(a) (a)	695	348	(a)	(a)	24
313	1.37	ī	25	25	34	34	0.08	426	24
313	2. 114	1	53	53	112	112	0.17	661	24
313	1.54	5	1, 139	228	1, 756	351	3, 63	483	24
313	(a)	2 2	(a) 120	(a) 60	552 252	276 126	(a) 0.38	(a) 657	24
313	2.10 (a)	1	(a)	(a)	110	110	(a)	(a)	24
313	1.704	2	88	44	150	75	0, 28	534	24
365	(a)	1	(a)	(a)	145	145	(a)	(a)	24
313	1.461	1	298	298	434	434	0.95	456	24
313	1.24	1	340	340	422 294	423	1.09	388	24
313	(a)	1	(a) 88	(a) 88	165	294 165	(a) 0.28	(a) 587	24
313	1.874	1	207	207	244	244	0.66	369	24
313	1.214	45	6, 190	138	7, 512	167	19. 78	380	2
77	. 56	23	1,074	47	603	26	13.93	43	24
313	. 67	2	265	133	177	89	0. 85	209	24
313	1.911	34	3, 154 153	93	6, 045	178	10. 08 1. 07	600 179	21
143 313	. 49	6	1, 798	300	882	147	5. 74	154	24
132	1.831	5	670	134	1, 228	246	5. 07	242	2
92	1.00	1	54	54	54	54	0.59	92	2
230	3.74	1	191	191	714	714	0.83	860	2
230	3.461	8	274 240	137	950 326	475	1.19 0.77	797 425	24
313	1.35	1	26	26	45	41	0.08	542	24
230	5. 31	1 4	742	186	3,941	985	3. 23	1, 223	2
77	. 63	4	238	60	150	38	3. 09	49	24
27	.75	9	149	17	111	12	5. 52	20	24
27	5. 31	2 4	714	179	3,792	20 948	1.78	1, 222	2
77	.92	2	135	68	124	62	3. 11 1. 75	71	2
230	1.55	5.	679	134	1,036	207	2. 01	356	2
365	1.534	2	265	133	467	204	0.73	561	2
365	2. 22	3	328	109	728	243	0.90	810	2
167 365	1.65	3 2	331 401	110 201	546 677	182	1.98	275 616	2
365	1. 69 1. 753	10	1, 465	147	2, 572	257	4.01	641	2
365	1.55	1	268	268	414	414	0.73	564	2
91	. 581	21	1, 396	66	818	39	15, 34	53	24
91	, 67	1	72	72	48	48	0.79	61	24
135	.92	45	10, 087	135 224	7, 156	124 159	1.00	124	24
313 53	(0)	14	(a)	(a)	662	49	(a)	(a)	25
313	2.25 1.23 1.50	1	279	279	627	627	U. 89	703	25
365	1.23	1	144	144	177	177	0.39	449	25
167	1.50	2	316	158	474	237	1.89	251	20
313	1.15	1	302	302	361	361	0.96	374	25
313	2.99 2.594	26	2,772	107	8, 288	319 109	8. 85 0. 13	936 812	25
313	1. 9×6	1	74	74	147	147	0. 24	622	25
91	. 55	8	454	57	250	31	4, 99	50	25
313	1.45	3	852	284	1, 228	409	2.72	451	23
91	.40	1	92	92	37	3?	1.01	37	25
78 313	1. 454	1	139 101	101	62 147	147	1. 79 0. 32	456	25
313	1. 564	2	87	44	136	68	0.28	489	25

Paid by the quantity. The daily rate of pay and days of work done cannot be given. H. Ex. 265——35

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of preduction presentation the establishment was obtained. In referring from this table to those on production by means of

4. 4.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
	_	1		
4		Office boys	Mixed fron and steel	United States
15	109	do	Bituminous coal	United States
17	55	Oilers	Pig iron	Vuited States
18	109	do	Pig fron	Southern district, U.S. United States
20	_	do	Steel billets	United States
21	_	do	Steel blooms	United States
22	100	do	Mixed iron and steel	United States
23 24	109	da	Bituminous coal	United States
25	156	do Oiler and puddlers' helper Oiler and trapper	Bituminous coal	Continent of Europe
26	_	Oiler and puddlers' helper	Mixed iron and steel	United States
27		Oiler and trapper	Bituminous coal Mixed iron and steel	United States
28 29		Oil room hands	Mixed iron and steel	United States
30	_	Onsetters.	Pig fron	Great Britain
31	9	Onsethers, assistant	Pig iron	Great Britain Northern district, U.S. Northern district, U.S.
32 33	32	do	Pig iron	Northern district, U.S.
24	_	do	Pig iron	Continent of Europe
35	45	Ore cleaners	Iron ore	United States
36	64 26	Ore crushers	Muck bar iron	United States
38	0	Ore dumpers	Pig tron	United States Northern district, I'. S.
39	101	do	Pig iron	Southern district, U.S.
40	_	Ore fillers	Alixed from and steel.	Great Britain
41		ore grindersdo	Mixed iron and steel Mixed iron and steel	United States
43		do	Mixed iron and steel	Great Britain
44	-	Ore men	Mixed iron and steel	Continent of Europa
45	44	Ore pilers	Pig iron	Northern district, U.S. United States
46	80	Ore setters	Iron ore	Continent of Europe
48	43	Ore sorters	Iron ore	United States
49	17	Ore stockers	Muck bar iron	United States
50	40	Ore wheelers	Pig iron	Continent of Europe
552	7	do	Muck bar iron	United States
553	-	do	Mixed iron and steel	United States
554	41	Overseers	Pig iron	Northern district, U. S.
556		do	Steel ingots	Continent of Europe Continent of Europe Continent of Europe
557	-	do	Steel rails	Continent of Europe
558	-	dodo	Lituminous cod	Continent of Europe Continent of Europe
559 560		Packers	Mixed from and steel	United States
561	58	Painters	Pig iron	Northern district L. S.
56:2	1	do	Steel ingots	United States
563 564	1	Parkonse men	Steel billets	United States
565	î	Paphouse man and scrapman	Stual incente	Chiral States
566	_	Passor	Mixed from and steel	Great Britain
567	-	Patcher Patternmakers	Mixed iron and steel Mixed iron and steel	Great Britain
568 569		do	Mixed iron and steel	United States
570		do	Mixed from and steel	Great Britain
571	-	do	Mixed from and steel	Orear Bullain
572	42		Finished bar iron	United States Great Britain
573 574	29		Muck bar fron	United States
575	148	Pick handler	Bituminous coal	Dominion of Canada
576	156	Pickers	Bitumpuous coal	Continent of Europe
577	_	do	Wired iron and steel	Continent of Europe
578		Picklers Picklers helpers	Mixed iron and steel	United States United States Continent of Europe Great Britain
580		Dig iron nammen	Mixed iron and steel	Continent of Europe
581		Pilers	Finished bar iron	Great Britain



one retablishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings, or daily		Actual	ondition fo	or period.		Condition i	nuous em-	Mar-
ing days in the period.	est to average daily	Different amployés.		rork done.	Earn	·	Necessary employés.	Consequent average earnings	gin- al num- ber.
<u> </u>	carnings.		Total.	Average.	Total.	Average.		ployé.	
313 313 313 313 313 313 313 313 313 313		211116285124112222216955172111267	Total. 312 140 4 182 301 483 300 763 881 249 27 106 60 191 262 87 258 270 1,090 480 191 317 94 95 355 333 179 129 163 1,241 1,241 1,487	Average. 156 140 4 182 81 165 96 176 176 277 191 261 135 135 135 73 70 61 388 73 179 277 2353 179 185 185 185 185 185 185 185 185 185 185	Total. \$131 78 2 246 361 656 470 1, 247 1, 247 226 33 293 244 1, 781 1, 183 224 823 89 631 1, 183 224 823 89 631 1, 750 647 2, 040 3825 193	### Average. ### \$66 78 2 246 561 109 235 249 16 16 293 244 17 77 107 37 117 77 107 37 118 126 605 4489 283 36 45 250 81 255 98	1.00 0.01 1.09 1.543 2.80 0.03 2.00 1.45 2.00 2.00 1.45 1.23 1.00 1.10 1.10 1.10 1.10 1.10 1.10 1.1	\$131 174 157 245 365 425 288 375 443 284 359 284 453 201 117 885 539 48 470 73 411 730 221 151 153 480 202 43 203 204 470 202 43 203 204 470 202 472 203 203 204 204 204 205 205 205 205 205 205 205 205 205 205	2514 2515 2516 2517 7518 2521 2521 2522 2523 2524 2528 2528 2528 2528 2528 2528 2528
90 143 813 167 78 78 78 78 313 513 513 513 155 315 155 315 155 313 155 313 155 313 155 313 155 313 155 313 155 315 155 315 155 315 155 315 155 315 155 315 155 315 31	. 66 1.86 1.80 1.75 1.45 1.07 1.68 1.08 1.58 1.58 1.58 1.58 1.59 1.59 1.73 1.50 2.88 2.00 1.42 2.00 1.09 1.25 1.25 1.25 1.25 1.25 1.25 1.25 1.25	88125112226212481011121211211224694	426 877 278 829 1711 4173 600 208 3711 36 570 215 54 (a) 215 213 302 213 98 292 213 1,598 1,651 2,515	87 278 333 333 360 237 600 134 93 122 87 22 54 (a) 108 209 159 108 209 108 209 108 209 108 209 209 209 209 209 209 209 209 209 209	282 161 402 577 63 249 447 50 625 57 1, 198 43 104 419 449 450 47 605 547 605 525 577 2, 558 1, 772 2, 558 1, 772 2, 559	56 161 493 289 32 125 75 75 127 50 146 156 19 133 43 104 419 225 47 603 118 122: 83 18 426 191	0.50 4.61 0.89 1.97 2.10 2.19 5.25 1.515 0.68 0.12 0.012 0.012 0.012 0.07 0.09 0.09 0.09 0.09 0.09 0.09 0.09	60 263 354 293 380 114 84 168 43 310 527 496 471 431 470 42 (a) 446 627 227 109 178 359 20 71 71 544 485 310	2551 2552 2553 2554 2556 2556 2556 2559 2561 2562 2563 2564 2563 2565 2566 2567 2571 2572 2573 2577 2577 2577 2577 2577 2577

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al aum- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2582		Pilers-concluded	Mixed iron and steel	United States
2583	-	do	Mixed iron and steel	United States
2584	-		Mixed iron and steel.	Continent of Europe
2586		do	Mixed iron and steel Mixed iron and steel	Great Britain
2587		Piler, chief.	Mixed iron and steel	Continent of Europe
2588	-	Piler and puncher	Mixed iron and steel	United States
2589 2590		Pilors' helper	Mixed iron and steel Mixed iron and steel	United States
2591		Pinchers	Mixed iron and steel	Great Britain
2592	10	Pipe fitters	Pig fron	Northern district, U.S
2593	1	do	Steel ingota	United States
2594 2595	7	do	Steel billets	United States
2396	-	do	Mixed iron and steel	United States
25117	-	Pipe layer	Bituminous coal Mixed iron and steel	United States
2598 2599	45	Pipedine boss	Iron oro	United States
2600	96	I'm besses	Bituminous coal	United States
2601	107	do	Bituminous coal	United States
2602		do	Bitaminous coal	United States
2604	12	do	Iron ore	United States
2605	43	do	Iron ore	United States
2607	72	Pit cleaners	Iron ore	United States United States
2003	7	do	Steel ingots	United States
2609	-	00	Steel ingets	Continent of Europe
2610	2	Pimen	Steel ingots	Continent of Europe United States
2612	5	do	Steel ingots	United States
2613	-	do	Steel ingots Mixed iron and steel	United States
2614		10	Mixed from and steel	Great Britain
2516	-	do	Mixed from and steel	Great Britain
2617	2	Pitman and pusher	Steel ingots	United States
2619	3	Pittigen and sanders	Sterl ingota	United States
2620	2	Pitmen and vessel cinders	Steel mgats	United States
2621	5	Pitmen's holpers	Mixed from and steel	Continent of Europe
2623		Plate heaters	Mixed iron and steel	Continent of Europe
26.4	1	Plate holders		Great Britain.
2628	20	Plate layers	Pig iron Finished bar iron	Great Britain
2627	40	do	Mixed from and steel	Great Britain
2628	1	10	M xed iron and stoel	Great Britain
2629	118	ilu	Bituminous coal	Great Britain
2631		Plane layers' laborer	Mixed from and steel	Great Britain
20.12	-	Plate repairers	Mixed iron and steel	Continent of Europe
20.13		Platemen	Mixed iron and steel	Continent of Earope United States
26.15	-	Plateman and straightener	Mixed iron and steel	United States
Thein	170	Planters	Steel blooms	Tuited States Great Britain
20.17	1.0	Phonbers' below	Steel blooms	United States
20 01	-	Toke ind	Mixed from and steel	United States
2000		Potrymen	Mixed iron and steel	United States Northern district, U.S
2011	10	do constant and a con	Pig iron	United States
2614	1	do	Mixed fron and steel	United States
204	2.110	the consequences of the co	Mixed iron and steel	United States
2000	100	10	Biturinous ccal	United States
13.4	101	Parte's	Pig tron	Southern district, U.S
104.0			Mixed from and steel	United States Continent of Enrope



one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual c	ondition fo	or period.		Condition in the continuous plays	nuous em-	Mar-
ing days in the period.	or daily rate near- est to average	Different employés.	Days of w	ork done.	Earn	ings.	Necessary employés.	Consequent average carnings	gin- al num- ber-
	daily earnings.	ompioy ex.	Total.	Average.	Total.	Averago.	ешрюусь	per em- ployé.	
318 313	\$1.48 1.41	29 10	2, 615 2, 178	125 218	\$5, 351	\$185 307	11. 55 6. 96	\$463 441	25.92 2.5×3
77	. 701	3	158	51	3, 072 108	36	1.99	54	2584
156	.33	7	832	47	110	16	6.01	16	23×5
77	1.36	2	256 75	128 75	850 71	175 71	1. 64 0. 97	214 73	258 6 2587
813	1. 334	1	3	3	4	4	0.01	417	2568
168	. 381	1 8	74	74 55	29 332	20	0.96	30 126	2599 2590
156	1.261	9	442 780	111	988	42 141	2.63 5.00	197	2501
318	1.261 1.75	8	163	54	2146	95	0. 52	549	25974
313 202	1.81	4	161 520	40 173	292 967	73	0. 52 2. 57	508 876	2503 2594
156	1.50	i	157	157	220	322 229	1.01	226	2505
313	2.091	3	837	112	1,010	337	1.08	938	2596
313	2. 00 2. 50	1 1	153 101	153 131	306 825	306 325	0.49 0.42	626 177	2507 2598
313	1.75	1	72	72	126	126	0. 23	548	2599
313	2. 431	2	256	128	623	812	0.81	763	2600
318	2.50° 2.874	1 1	130 313	130 313	325 900	325 900	0. 42 1. 00	783 900	2601 2603
313	2.871 1.671	2	359	195	650	325	1. 24	523	2603
313	2, 50	2 7	509	800	1,498	749	1. 91	783 503	2604
313 313	1. 60½ 2. 35	111	1, 209 2, 474	173 225	1, 941 5, 909	277 528	3. 86 7. 90	735	2005
813	2.41	1 11	1,045	95	2 521	2:9	8.84	755	2607
230	1. 55	12	685 153	57 51	1,061	R8 32	2. 98 1. 99	354 48	2600 2600
27	.621 .621	i	20	30	19	19	1.11	17	.2600
132	3.58	15	1, 386	92	4, 967	831	10.50	473	2611
132 78	1.60	33	222	111 58	376 1, 2×3	18H 39	1.68 24.64	224 52	2612
813	(a)	**	1,922 (a)	(4)	8,043	338	(a)	(a) ³²	2614
156	(a)	6	(a)	(a)	625	104	(a)	(4)	2615
58 132	(a) 2. 33	13	(a) 112	(a) 112	455 261	261	(a) 0.85	(4)	2616 2617
230	3. 13	i	153	153	479	479	0.67	720	2618
132	2.013	2	203	102	592	21/6	1 54	385	2619
133 132	3.06 i 1.38	10	203 223	102 32	622 445	811 45	1.54 2.45	404 182	2621
813	.78	8	1, 062	354	831	277	8. 39	245	2622
313	. 69	2	621	311	428	214	1.98	216	2623
53 135	. 244	2	56 580	28 116	14 457	91	1.06 4.30	13 106	2624 2625
99	.77	5 2	230	115	176	88	2. 33	76	2626
156	.971	1	148	143	139 24	139	0.03	152	2027
53 313	1. 10	1 2	41 333	167	356	183	0.77 1.06	31 344	2028
91	. 934	3	23:3	77	217	72	2.55	85	2500
156 313	. 81	1 5	143	143 839	114 911	114 182	0. 92 5. 42	124 168	2631
313	. 531	1 1	1, 695 331	831	218	218	1.06	206	2623
313	1,63	26	8, 154	121	5, 191	200	10. 08	515	2634
313 144	1. 18 2. 00	1 1	50 147	50 147	59 294	59 204	0. 16 1. 02	288	2535 2636
91	1. 23	i	79	79	100	100	0.87	115	2637
144	1.50	1	167	167	252	252	1. 16	217	2638
286 287	2. 25 1. 50	2 5	245 1, 222	123 244	551 1,833	276 367	0. 26 4. 26	643 431	2639 2640
365	1.48	8	418	52	618	77	1. 15	540	26+1
313	1. 25	7	267	134	353 800	167	0.85	390	2642
155 313		7	579 1, 065	83 185	1,626	123 232	3, 74 8, 47	230 469	2643
813	. 951	1 1	131	131	125	125	0.42	299	2645
313	. 95	2	163 153	82 153	156 150	78 150	0, 52 0, 82	300 180	2646
184 213		1	153 356	153 356	130 527	150 527	0.82	180	2047 2C48
92		8	628	79	265		0.83	89	2G19

⁶ Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

| Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2650		Porters-concluded	Mixed fron and steel	Continent of Europe
2651	-	do	Coke	Continent of Europe
2652	-	Press hands	Steel rails	Continent of Europe
2653 2654		Pressmendo	Steel blooms	United States
2655		Pressmen's helpers	Steel blooms	United States
2656	-	Propman and weighman	Bituminous coal	United States
2657 2658	7	Puddlersdo	Muck bar iron	United States
26.10	17		Muck bar iron	United States United States
2660	26	do	Mack bar iron	United States
2661			Mixed fron and steel	United States
2662 2663		do	Mixed iron and steel	United States
2664		do	Mixed iron and steel	United States
2663		do	Mixed iron and steel	United States
2666 2667		do	Mixed iron and steel Mixed iron and steel	United States
2068	_	do	Mixed iron and steel	Continent of Europe
2660	_	do	Mixed iron and steel	Continent of Europe
2670 2671		do	Mixed iron and steel Mixed iron and steel	Continent of Europe Great Britain
2672	_	do	Mixed from and steel	Great Britain
2673	17	Puddlers, boss	Muck bar iron	United States
2674 2675		do	Mixed iron and steel Mixed iron and steel	United States
2676	7	Puddlers and puddlers' helpers	Muck bar iron	United States
2677	_	do	Mixed iron and steel	United States
2678 2679	7	Puddlers' helpers	Mixed fron and steel	United States
2680	9	do	Muck bar iron	United States United States
2681	17	do	Muck bar iron	United States
2682 2683	26	do	Muck bar iron	United States
2684		do	Mixed iron and steel Mixed iron and steel	United States United States
2685	_	ob	Mixed iron and steel	United States
2686		do	Mixed iron and steel	United States
2687 2688		do	Mixed iron and steel Mixed iron and steel	United States
2689	_	do	Mixed iron and steel	United States
2690	_	do Paddlers' helper and rougher Paddlers' helper and rougher-up	Mixed fron and steel	Continent of Europe
2691 2692	_	Paddlers' helper and rougher	Mixed irou and steel Mixed iron and steel	United States
2693		Puddlers' helper and shearmen's helper	Mixed iron and steel	United States
2694	7	Pullers at squeezers	Mack bar iron	United States
2695 2696	7	Pullers-downdo	Steel ingots	United States
2697		Pullers-out	Mixed iron and steel	United States
2698	_	Pullers-out and rougher	Mixed iron and steel	United States
2699 2700		Pullers-over Pullers-up	Mixed iron and steel	Great Britain
2701	1-	do	Mixed iron and steel Mixed iron and steel	United States
2702	_	do	Mixed iron and steel	United States
2703 2704		do	Mixed from and steel	Gr at Britain
2705	8	Pullers-up (boys)	Mixed iron and steel Finished bar iron	Great Britain United States
2706	-	do	Mixed iron and steel !	United States
2707	-	Pump reversers	Steel blooms	United States
2708 2709	1 5	Pumpmendo	Steel ingots	United States
2710	_	do	Mixed iron and steel	United States
2711	-	фффф	Mixed iron and steel	Continent of Europe
2712	107	do	Lituminous coal	United States
2714	101	do	Bituminous coal	United States
2715	_	do	Bituminous coal	United States
2716	_	do	Bituminous coal	United States

PART II.—TIME AND EARNINGS.

TIME AND EARNINGS BY OCCUPATIONS-Continued.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.)

Work-	Actual daily carnings, or daily	aily Actual condition for		condition for	r period.		Condition if workmen had continuous em- ployment.		Magir
days in the period.	or daily rate near- est to average	Different	Days of v	ork done.	Earn	ings.	Necessary employés.	Consequent average earnings	nui be
	daily earnings.	employés.	Total.	Average.	Total.	Average.	Carpioj ca.	ployé.	
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s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

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THE ATTE WINA IT OF ACTUAL AND THEORETICAL

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one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note about 0 taken of the industry, as a new series of numbers is used for each.]

Work.	Actual daily earnings,		Actual e	ondition fo	r period.		Condition if workmen had continuous em- ployment.		Mar
days in the period.	or daily rate near- est to average	Different	Days of v	work done.	Earn	ings.	Necessary	Consequent average earnings	al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
777 313 313 313 313 313 313 313 313 313	\$0.50 1.75 1.86 90.50 1.75 1.25 90.60 1.75 1.17 1.25 90.60 1.25 1.17 1.10 1.25 1.25 1.10 1.25 1.25 1.25 1.10 1.25 1.	222471952241221221221212141112411112312982172241228511288111121111	149 250 672 434 1,164 129 260 910 910 910 910 910 910 120 360 331 1866 160 132 255 331 1866 161 123 369 264 264 264 264 269 261 27 281 281 281 281 281 281 281 281 281 281	75 125 236 109 166 129 109 109 26 46 47 48 48 48 180 66 205 160 93 101 17 297 4 95 132 16 101 223 200 176 777 352 201 201 180 180 180 180 180 180 180 180 180 1	\$88 450 1, 223 2, 168 1601 1, 057 706 161 83 32 1, 129 128 449 449 449 175 789 166 175 789 167 181 181 181 181 181 181 181 181 181 18	\$44 225 613 310 128 32 211 27 29 83 106 64 225 225 225 225 225 225 225 22	1.94 0.80 2.139 2.72 2.375 2.88 18.95 2.139 2.375 0.85 1.061 0.445 0.29 16.485 0.09 16.485 0.09 1.120 0.09 1.1	\$45 563 571 583 208 208 208 208 208 208 208 208 208 208	277 277 277 277 277 277 277 277 277 277

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of prediction presents for the establishment was obtained. In referring from this table to those on production by means of

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gin-	lish-	A STATE OF THE STA	I I S T L S S V	I I I we have a second
al	ment	Occupation.	Industry.	Locality.
num-	num	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
bor.	bor			
_	_			
2785	_	Roll turners-concluded	Mixed iron and steel	United States
2786	-	do	Mixed iron and steel	United States
2787		do	Mixed iron and steel	United States
2784	-	do	Mixed iron and steel	Continent of Europe
2789	$\overline{}$	10	Mixed iron and steel	Great Britain
9790 9791	_	Roll furnors' apprentice	Mixed from and steel Mixed from and steel	Great Britain
9792		Roll turners helper	Mixed from and steel	United States
2708		Roller holders	Mixed iron and steel	Great Britain
2794	7	Rollors	Mnek bar iron	United States
2765	0	do	Muck bar iron	United States
2704	17	10	Mack bar iron	United States
2767	20	10	Mack bar iron	United States
2708 2700	8	. ito	Finished bar iron	United States
2800	29	. 10	Finished bar from	Great Britain
2801	4.0	10	Steel blooms	United States
2803		10	Steel blooms	United States
2803		. do	Steel rails	Continent of Europe
2804	: i	lo	Steel rails	Continent of Europe
23655	' ·	do	Mixed from and steel	United States.
2867	;	. 10	Mixed from and steel	United States
280	٠.	. 40	Mixed iron and steel	United States
2400		du	Mixed iron and steel	UL ed States
2410		da	Mixed iron and steel	United States
2011		du	Mixed fron and steel	United States
2412		Ų t	Mixed iron and steel	United States
2313	,	da	Mixed iron and steel Mixed iron and steel	United States
2414		da	Mixed from and steel	Continent of Europe
2.11		da	Mixed iron and steel	Continent of Europe
2117	,	do	Mixed from and steel	Continent of Europe
2314		. do	Mixed iron and steel	Continent of Europe
3 (1)		da	Mixed iron and steel	Great Britain
2.30			Mixed from and steel	Great Britain
21 3	<u>.</u>	Hartin Incas	Finished bar iron	United States
.4	•	Roberts Chief Edit as and crows do hother and rougher down	Steel rails	Continent of Europe
11.1		Het is inderowe	Mixed iron and steel	United States
		- du	Mixed iron and steel	United States
1.1		However and rougher down concernies.	Mixed iron and steel	United States
4.74		Robert and wer hman	Mixed iron and steel	United States
	د, غ	in	Liniahad har iron	United States
7 1	ü		Finished bar iron	United States
1231		d	Finished bar iron	Grent Britain
.:			ata a al maila	
1		du	Steel talls	Continent of Europe. United States United States
41		4	Mixed iron and steel	United States
1		d ()	Mirad from and steel	United States
4 1		d :	Mixed iron and steel	United States United States United States Continent of Europe Great Britain Great Britain
lais		da	Mixed iron and steel	United States
3.14			Mixed iron and steel	Continent of Europe
3410	!		Mixed iron and steel	Great Britain
曆((.			Mixed from and steel	Great Britain
22/3	39	Letter a helpergelinest	Mixed iton and steel	Great Britain
超17		Letter the present set to the light set of the light send to the light set of the light set	Steel in 2014	United States. United States United States United States United States
911	1,1	16 1115.11	Iron ore	United States
#17	! 'j!	francisco de la constitución de	Muck bar iron	United States
1			Muck bar fron	United States
[[4]	19			
18 d	` 1	40	Enished har iron	United States
		1611	Sicel rails	Continent of Europe
1461	' '			

one ostablishment cannot be compared with those for another (except as to daily rare of pay), unless tion. Tables I to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work			Actual	condition fo	r period.		Condition had contin	Mar	
days in the period.	or daily rate near est to average	Different employés.	Days of	work done.	Earn	ings.	Nccessary employés.		gin- al num ber.
	daily earnings.	carpioj es.	Total.	Average.	Total.	Average.	employes.	per em- ployé.	
155 313 313 313 313 313 313 313 313 313	\$1.527. \$2.527	21355691114222225288842273888422738884227388842278882231 12126666925317151513216011441334344278882231 (b) 13212662221284	229 318 545 341 243 453 755 148 180 162 446 447 698 406 1,276 447 698 419 475 198 1,240 200 410 375 1,98 1,010 (a) 1,185 5,290 (a) 2,266 (a) 2,266 (a) 2,266 (a) 2,266 (a) 2,266 (a) 3,055 (a) 3,055 (a) 3,055 (a) 1,183 2,266 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 (a) 1,192 2,260 1,193 4,190 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 1,192 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,260 2,271 1,195 2,271 2,2	115 115 118 1195 64 41 56 64 41 56 64 47 75 148 213 1293 225 224 87 100 210 68 68 126 (a) 128 (a) 198 234 63 (a) 202 (a) 203 201 (a) 202 (a) 203 203 203 203 203 203 203 203 203 203	\$808 1, 548 1, 911 201 201 201 201 201 201 201 201 201 2	\$404 1, 548 037 611 77 259 17 259 967 1, 052 1, 015 1, 044 2, 408 206 518 1, 552 1, 750 1, 811 1, 750 1, 881 1, 405 52 266 55 57 403 70 5, 230 1, 157 1, 067 1, 280 681 682 885 885 885 87 10 156 17 10 18 18 18 18 18 18 18 18 18 18 18 18 18	1. 48 1. 02 1. 88 2. 71 1. 82 1. 85 2. 63 1. 12 1. 12 1. 12 1. 12 1. 12 1. 12 1. 13 1. 14 1. 14 1. 15 1. 14 1. 15	\$347 1, 524 1, 022 83 32 87 21 442 19 456 1, 227 2, 019 1, 430 1, 282 3, 081 2, 196 2, 033 (a) 1, 662 2, 033 (a) 2, 196 2, 121 (a) 936 (a) 77 277 777 277 777 102 (a) 1, 033 1, 765 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 776 1, 033 1, 0	278 278 278 278 278 278 278 278 277 277

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

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one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables 1 to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily carnings,		Actual o	ondition for	period.		Condition if working had continuous employment.		Ma
days in the period.	or daily rate near- est to average	Different	Days of v	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin al num ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
313	(a)	25	(a)	(a)	\$5, 103	\$204	(a)	(a)	28
286	(a)	18 22	(a)	(a) 73	5, 137	285 295	(a) 5,14	(a)	28
287	\$1.024 3.11	18	1, 610 4, 248	236	6, 482 13, 214	734	14.80	\$1, 260 893	28
168	(a)	7	(a)	(a)	1,011	144	(a)	(a)	28
155	2.47	13	583	45	1,441	111	3.76	383	28
313	(a)	6	(a)	(a)	1, 221	611	(a)	(a)	28
313	2. 68 1. 04	15	1, 173 4, 071	196 271	3, 144 4, 229	524 282	3. 75 13. 00	839 325	28 28
313	. 96	19	5, 299	279	5, 082	267	16, 93	300	28
48	(a)	25	(a)	(a)	834	33	(a)	(a)	28
155	1.97	1	68	68	134	134	0.44	305	28
155 286	1.81	1 2 1	(a) 73	37	132	66	0.47	280	28
286	(a) 1,50	2	310	(a) 155	465	233	(a) 1.08	(a)	25
286	1.72	27	139	20	239	34	0.48	492	28
313	. 54	1	326	326	176	176	1.04	169	28
296 313	4. 08½ 3. 73	12	505	126 124	2, 062 5, 560	516 463	1.77 4.76	1, 168	25
155	2.934	3	1, 491	53	470	157	1.03	1, 167 455	28
313	2.854	2 2	464	232	1, 324	662	1.48	803	25
313	3.00	2	446	223	1, 337	669	1.42	935	28
299 286	2. 60	1 7	285	285	742	742	0.95	778	25
313	(a) 3.42	16	(a) 1, 837	(a) 115	3, 324 6, 284	475 393	(a) 5, 87	(a) 1,071	28
155	2.34	6	220	37	513	86	1. 42	363	2
313	2, 484	2	505	253	1, 254	627	1.61	777	25
155	1. 654 2. 39	10	81 623	81 62	134	134	0. 52 1. 99	256	25
313 77	. 52	4	219	55	1,488	149	2.84	748 40	29
78	1.094	4	295	74	323	81	3.78	85	2
155	2.50	1	152	152	379	379	0.98	386	2
313	1. 70 1. 92	1 1 1 2	20 25	20 25	34	34	6.06	532	28
313	2 424	2	131	66	48 318	150	0.08 0.42	601 760	20
78	. 90	3	190	63	171	57	2. 14	70	2
53	(a)	6	(a)	(a)	198	33	(a)	(a)	28
365	1. 55	6	455	76	699	117	1.25	561	28
365	. 91	7	1, 080	154	1, 333	190 82	2,96 0,29	451 285	25
- 365	. 61	3	312	104	190	63	0.85	202	22
313	.36	4	839	210	301	75	2.68	112	2
365 135	1.50	1	242 132	242 132	363 94	363 94	0.66	548	22
184	1.10	2	290	145	319	160	1.58	96 202	2
48	- 431	15	85	43	37	19	1.77	21	22
92	.19	15	570	38	110	7	6, 20	18	23
77	.85	1 4	67 268	67	57 184	57 46	0.87 3.44	66 54	25
287	1.58	6	1, 136	189	1, 796	299	3,96	454	2
313	.614	3	906	302	559	186	2.89	193	23
313	.504	2 4	707	354	421 103	211	2.26	186	25
48 53	. 64	2	164 125	63	94	26 47	3.42 2.36	30	21
305	1.06	ĩ	67	67	71	71	0.74	96	25
305	1.60	12	3, 961	330	6, 266	523	10, 85	577	196
184	. 50	1 7	178 239	178	89 186	59	0.97	92	25
313	.80		2, 384	170	2, 108	151	0.74 7.62	251 277	25
313	1.37	25	856	34	1, 177	47	2.74	430	
313	1, 80	14 25 1 2	91	91	164	164	0. 29	564	1 22
313	1.81		265 481	133 120	1,002	240 231	0.85 4.08	567 325	1 15
156	2.084 1.024	4	540	135	554	139	3.46	160	119
168	101	7	(a)	(a)	6, 496	92n	(a)	(a)	794
53 313	.281 (a)	1 1	(a) 48	(a) 48	204	14 204	(a)	(a) 15	25

s Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Ea- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
2019		Scrap pilers—concluded	Mixed from and steel	United States
2920		Scrap piler and scrapper	Mixed iron and steel	United States
2921	-	Scrap piler and scrapper	Mixed iron and steel	United States
2922 2923	7 7	Scrap stockers and scrappers	Steel ingots	United States United States
2921		Scrap unloaders	Mixed iron and steel	United States
2925	7	Scrap wheelers	Steel ingots	United States
2926	_	do	Steel blooms	United States
2927 2928		do	Steel blooms	United States
2929	55	Scrapers	Pig iron	Northern district, U.S
2930	8	do	Finished bar fron Mixed fron and steel	United States
2931 2932		do	Mixed from and steel	United States
2933		do	Mixed iron and steel	Maited States
2934 2935	10 83	Scrapmendo	Pig iron	Northern district, U.S Northern district, U.S Southern district, U.S Southern district, U.S
2935	95	do	Pig iron	Southern district, U.S.
2937	101	do	Pig iron	Southern district, U.S
2938	1	do	Steel ingots	United States
2939	i	Scrapmen and unloaders Scrapmen and water carriers	Steel ingota	United States
2941	9	Scrappers	Muck bar iron	United States
2942	7	do	Steel ingots	United States
2943		Scrapper and scrappers' helper	Mixed from and steel Mixed from and steel	United States
2945	9	Scrappers' helpers	Muck bar iron	United States
2946	_	dò	Mixed fron and steel	United States
2947	148	Screenersdo	Steel ingots	United States Dominion of Canada
2919	170	do	Bituminous coal	Great Britain
2950	_	Screw setters	Mixed iron and steel	Continent of Europe
2951 2952		Screwmen	Steel billets	United States
2053		Servanta	Steel rails	Continent of Europe
2954	170	Shaftman	Bituminous coal	Great Britain
2955 2956		Shape hammermanShape hammerman's helpers	Mixed iron and steel Mixed iron and steel	United States
2957		Shear boys	Mixed iron and steel	Continent of Europe
2958	9	Shearmen	Finished bar iron	United States
2959 2960		do	Steel blooms	United States
2961	_	do	Sterl rails	Continent of Europe
2963	-	do	Mixed iron and steel	United States
2963 2964	-	do	Mixed iron and steel Mixed iron and steel	United States
2965		do	Mixed iron and steel	United States
2966		do	Mixed iron and steel	United States
2967 2968		do	Mixed iron and steel Mixed iron and steel	United States Continent of Europe
2969		do	Mixed from and steel	Continent of Europe
2970	-	do	Mixed iron and steel	Continent of Europe
2971		do	Mixed iron and steel Mixed iron and steel	Great Britain
2972 2973		Shearmen and shearmen's hulpers	Mixed iron and steel	United States
2974	-	do	Mixed fron and steel	United States
2975	-	Shearmen's helpers	Mixed iron and steel Finished bar iron	United States
2976 2977	9	Shearmen s helpersdo	Steel blooms	United States
2978		do	Steel blooms	United States
2979	-	do	Mixed iron and steel	United States
2980 2981		do	Mixed from and steel Mixed from and steel	Continent of Europe
2982		do	Mixed iron and steel	Continent of Europe
2983		Sheet floormen	Mixed iron and steel	United States
2984	109	Shifters	Bituminous coal	United States

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work.	Actual daily earnings,		Actual c	ondition for	r period.		had conti	if workmen nuous em- ment.	Ma
ing days in the eriod.	or daily rate near- est to average	Different employés.	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	gir al nur be
	daily earnings.	employea.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	-
168	(a)	13	(a)	(a)	\$2,025	\$156	(a)	(a)	20
155	\$2.071	2	96	48	199	100	0.62	\$321	25
155	2. 01	1	120	120	241	241	0.77	311	25
230	1.804 2.614	3	109 433	144	1, 132	377	0.47 1.88	416 601	21
313	(a)	(6)	(a)	(a)	2, 334	(b)	(a)	(a)	2
230	1.55	4	23	0	36	9	0.10	360	2
132	2, 194	5	117	23	257	51	0.00	290	2
287	1.51	1	390	390	584	588	1. 36	433	2
132	2. 401	2	111	50	267	134	0.84	318	2
181	1.50	3	13	4	20	7	0.07	278	2
299 286	1. 474	6	930 490	155 123	1, 371	223	3.11 1.71	441 237	2
287	1.60	7	1,749	250	2, 798	102	6.09	459	2
313	. 99	i	118	118	117	117	0.38	310	2
365	1.60	5	423	18	713	143	1.16	617	2
92	1.80	1	5	5	9	9	0.05	166	2
334	1.00	5	290	58	291	58	0.87	335	2
184	1, 15	1 4	361	90	415	104	1.96	212	9
313	1.821	42	837 10	20	1,528	30	2. 67 0. 03	571 563	2
313	1.63	2 3	21	7	18	11	0.03	527	2
286	4.14		1, 259	252	6.221	1, 244	4.40	1,413	2
230	3, 584	5 3	351	117	6, 221 1, 258	419	1.52	824	2
155	3. 39	2	64	32	217	109	0.41	526	9
155	1.844		26	26	48	44	0. 17	286	2
286 155	2. 141	10	2, 518	252	5, 403	540	8, 80	614	2
313	1.41	2	17	1	10	6 5	0.11	219 447	2
313	1.00	6	1, 629	272	1, 633	272	5. 20	314	2
91	.60	35	2, 201	63	1, 457	42	24. 19	60	2
313	. 67	3	780	260	521	174	2.49	209	2
202	2.45	5	1, 110	222	2, 746	549	5. 50	500	2
144	1.50	5	551	110	828	166	3, 83	216	2
78	1. 424	3	107	36	31	10	1.37	23	1 3
168	8. 034	1	90 164	90 164	1,318	1,318	0.99	1,350	2
168	2. 164	2	323	162	600	350	1.93	364	2
313	. 36	2 4 2 2 2	791	198	284	71	2, 53	112	2
286	2.50	2	446	2:23	1, 117	559	1.56	716	2
132	3. 80	2	217	100	845	423	1.64	514	2
230	5. 55 g	1	384	192	2, 133	1,067	1.67	1, 278	1 2
313	1.39	10	1, 883	55 188	2, 630	263	0.71 6.01	52 437	2
286	2.05	25	4, 092	164	8, 398	336	14.31	587	2
313	1.614	23	3, 689	160	5, 954	259	11.79	505	2
287	1.57	8	2,510	314	3, 952	494	8.75	452	2
168	1. 80	15	1, 253	84	2, 254	150	7.47	302	2
313	1. 464	9	1,076	120	1, 576	175	3,44	458	2
313	.701	22	4, 354	198	246 2, 216	101	13.91	159	2
313	.54	10	2, 431	243	1,312	131	7. 77	169	2
156	3.54	7	916	135	3, 349	478	6.00	552	2
53	.77	3	92	31	71	24	1.74	41	2
286	(a)	(b)	(a)	(a)	3, 932	(b)	(a)	(a)	2
313	1.40	1	170	176	263	263	0. 56	468	2
286	(a) 1,50	12	(a) 830	(a)	8, 335 1, 332	695 333	(a)	(a) 429	2
132	2.644	11	833	76	2, 204	200	3. 11 6. 31	349	2
230	1,75	10	1.527	153	2, 204 5, 730	573	6.64	863	2
286	1.00	1	121	121	121	121	0.42	286	2
313	1.524	6	1,472	245	2, 247	373	4, 70	478	2
77	.52}	1	81	81	19	19	1.05	18	2
313	. 52	24	4, 774	199	2, 499	104	15. 25	164	2
313	1.50	2	449 236	2:15	673	837 429	1, 43 0, 75	469 569	2

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. b Number of employes not given.

TABLE XIII.-SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production-presents-for the establishment was obtained. In referring from this table to those on production by means of

Mar. gin. al	Ea- tab- lish- ment	Occapation.	Industry.	Locality.
bor.	ber.		· ·	
2085		Shifters—concluded	Bituminous coal	United States
2016		Shinglers	Mixed iron and steel	United States
2987		do	Mixed iron and steel	Great Britain
2988 2069		Shippers	Mixed iron and steel Mixed iron and steel	United States
2090		do	Mixed iron and stoel	United States
2991		do	Mixed iron and steel	United States
2002		do	Mixed iron and steel	United States
2093		Shippers' helper	Mixed iron and steel	United States
2905		Shippers' helper	Mixed iron and steel	United States
2006		Shovellers	Mixed iron and steel	United States
2907 2008	42	do	Rituminous coal	United States
2099		Sing craneman	Pig iron	Great Britain
3000		Slag haulers	Bituminous coal	United States
3001	148	Slag hauler and trapper	Bituminous coal	Dominion of Canada United States
3003		Slag loaders	Mixed from and steel	Continent of Europe
3004	-	Blag shove lers	Bituminous coal	United States
3005 2006	40	Slag shoveller and trapper	Bitaminous coal Pig iron	United States
3007	40	do	Steel ingots	Continent of Europe
8008		(lo	Mixed from and steel	Continent of Europe Continent of Europe Continent of Europe Northern district, U.S.
3009	41	do	Mixed iron and steel	Continent of Europe
3010 3011	67	Slagmen	Pig iron	Northern district, U.S
3012	83	do	Pig iron	Northern district, U.S.
3013	103	do	Pig iron Pig iron	Southern district, U.S.,
3014 3015	1	dodo	Steel ingota	Great Britain
3016		do	Mixed iron and steel	United States
3017	_	do	Mixed iron and steel	Continent of Europe
8018 3019		Slute pickers	Mixed iron and steel Bituminous coal	Great BritainUnited States
3020	56	do	Iron ore	United States
3021	-	Slotters	Mixed iron and steel	United States.
3022	1	Slurry mixers	Steel ingota	United States
3023	156	Sorters	Mixed iron and steel Bituminous coal	Great Britain
3025	156	Sortera, chief	Bituminous coal	Continent of Europe
2026	36	Spare hands	Pig iron	Great Britain
3027		do	Mixed iron and steel Mixed iron and steel	Great Britain
3029		Squeezers	Mixed iron and steel	United States
3030		L do	Mixed iron and stool	Great Britain.
3031	26	Stable bossesdo	Muck bar iron Bituminous coal	United States
3033		do	Bituminous coal	United States
8034	42	do	Iron ore	United States
3035 3036	42	Stable boys	Iron oro	United States
3036	41	do	Pig iron	Northern district II 9
80:18	49	do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S.
3039	83	do	Pig iron i	Northern district, U. S
3040	84	dodo	Pig iron	Northern district, U.S.
8041 3042	109	do	Pig iron	Sonthern district, U.S United States
8043	148	do	Bituminous coal	Domini n of Canada
3044	156	do	Bituminous coal	Continent of Europe
3045 3046	41	do	Iron ore	United States
8047	43	[do	Iron ore	United States
3018	45	do	Iron ore	United States
3049 3050	101	Stableman and teamster	Pig iron	Southern district, U.S.
30.00	170	Staithmen	Bituminous coal	Great Britain
8051	170	Staithmen's belper		

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.

Work-	Actual daily earnings,		Actual o	condition fo	r period.		had contin	f workmen nuous em- nent.	Ma
days in the period.	or daily rate near- est to average	Different	Days of w	rork done.	Earn	ings.	Necessary	Consequent average earnings	al nur ber
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employes.	per em- ployé.	
313	\$1. 80	1	254	254	\$453	\$453	0.81	\$558	20
313 156	(a) 2,28	3	(a) 390	(a) 130	3, 349 889	1, 675 296	(a) 2.49	(a) 356	29
313	1.494	9	1, 715	191	2, 500	285	5.48	468	25
313	1.85	ĩ	342	342	632	632	1.09	578	20
313	2, 30	1	317	317	728	728	1.01	719	21
313	1.76	2	639	320	1, 125	563	2.04	551	25
155 313	3. 45 2. 491	1 3	155 636	155 212	1, 586	540	1.00 2.04	540 781	21
155	1.66	1	14	14	23	23	0.00	255	21
286	(a)	6	(a)	(a)	533	23 89	(a)	(a)	25
155	1. 37	5	199	40	273	55	1. 28	213	25
313	1.72 1.35	15	1, 081 1, 332	72 333	1, 862	124 452	3. 46 4. 26	539 425	25
135	. 794	i	133	133	105	105	0.99	~ 107	20
313	1. 25	4	75	19	96	24 224	0.24	401	30
313	1. 10	1	211	211	224	224	0. 67	332	30
313	. 941	1	38	38	36	26	0.12	297	30
313	1. 33	9 2	1, 905	212	368 12	6	6.09	60 417	30
313	1.00	î	2	2	2	2	0.01	313	30
90	. 671	5	272	54	184	87	3, 03	61	30
27	. 82	9	174	19	143	16	6.44	22	30
313	. 431	4	1, 054 281	264 281	460 147	115 147	3.37 0,90	137 164	30
167	1, 50	1 7	837	120	1, 255	179	5.01	250	30
365	1, 60	6	1, 583	264	.2, 579	430	4,34	505	30
92	1.87	4	363	91	679	170	3.95	172	30
365	1.15	16	1, 738	109	2,004	125 126	4.76	421 136	30
135	1. 494	10	1,350 213	135	1, 363	106	10.00	467	36
313	(a)	2	(a)	(a) "	782	391	(a)	(a)	30
313	. 551	10	1, 901	190	1,059	106	6.07	174	30
156	. 84	4	353	88	296	74	2. 26	131	30
313	1.50	1	241 96	241 96	384	384 64	0. 77 0. 31	499 209	30
313	1.911	4	264	66	505	126	0.84	599	30
313	1, 35	4	248	62	333	83	0.79	420	30
156	(a)	18	(a)	(a)	3, 497	194	(a)	(a)	30
77	.45	6 3	239 160	53	107	18 32	3.11 2.08	34 47	30
91	.60	16	1, 504	94	903	56	16. 53	55	30
48	(a)	37	(a)	(a)	727	20	(a)	(4)	30
53	(a)	94	(a)	(a)	2,463	26	(a) 0.38	(a) 393	30
313	1. 25	1 2	(a)	(a)	148	148 53	(a)	(a) 393	30
313	(a) 2.144	ĩ	14	14	30	30	0.04	671	30
365	. 984	1	365	365	360	300	1.00	360	30
365	1.61	1	365	365	588	588	1.00	588	30
365 365	1.50	1 3	361 375	361 125	542 262	542 87	0,99	548 255	30
167	1.621	1	166	166	270	270	0.99	272	30
365	1.31	2	329	165	431	216	0.90	478	30
365	1.15	1	357	357	411	411	0.98	420	30
122	1. 15 1. 06	1	92 122	92 122	105 122	105 122	1.00	105 122	30
365	1.07	1	299	299	320	320	0,82	391	30
365	1.40		357	89	500	125	0.98	511	30
365	1. 101	2 5	690	345	761	381	1.89	403	20
77	.61	5	159	32	98	20	2.06	47 356	30
365	1.15	1 7	354 1, 846	354 264	2, 122	345	0. 97 5. 06	420	30
313	1. 24	5	142	28	176	35	0.48	388	20
313	. 70	5 2 1	372	186	176 235	128	1.19	215	30
184	1.39	1	198	198	275	275	1,08	256	30
91 91	. 95	3 1	223 76	74 76	212 27	71 27	2, 46 0. 84	87 32	30
202	2,39	3	356	119	850	283	1.76	482	20

s Paid by the quantity. The daily rate of pay and days of work done cannot be given. H. Ex. 265——36

TABLE XIII .-- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the fac's for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

3053 al mm ber. h h h h h h h h h h h h h h h h h h h	-	Occupation. Stampers—concluded	Mixed fron and steel. Mixed fron and steel. Mixed fron and steel. Mixed fron and steel. Steel blooms Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. United States. United States. Great Britain Great Britain United States. United States. Continent of Europe Continent of Europe Continent of Europe Continent of Europe
100 100	1 7 170 8	Stampers—concluded do do do Steel loaders Steel pourers do do do Steel pourers the bounders Steel pourers the bounders Steel pourers the bounders Steel pourers Steel pourers	Mixed fron and steel Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States
053	1 7	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain. United States. United States. United States. Continent of Europe. Continent of Europe.
1053 1054 1055 1056 1057 1058 1059 1060 1062 1064 1065 1066 1066 1066 1067 1068 1069 1070 1068 1070 1071 1087 1087 1087 1087 1087 108	170	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain. United States. United States. United States. Continent of Europe. Continent of Europe.
1054	170	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain Great Britain United States. United States. United States. Continent of Europe Continent of Europe.
1054	170	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain. United States. United States. United States. Continent of Europe. Continent of Europe.
1054	170	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed fron and steel Mixed fron and steel Mixed fron and steel Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain. United States. United States. United States. Continent of Europe. Continent of Europe.
3054	170	do do do Steel Joaders Steel pourers do do do Steel pourers' External pourers' Steel pourers' Steel pourers' Steel	Mixed iron and steel Mixed iron and steel Steel blooms Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States. Great Britain Great Britain United States. United States. United States. Continent of Europe Continent of Europe.
3056	170	di Steel loaders Steel pourers do do do do do Steel pourers Steward Steward Stickers-in	Mixed iron and steel Steel blooms Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	Great Britain
3058 3058 3058 3061 3062 3653 3064 3065 3066 3066 3066 3067 3071 3072 3073 3075 3076 3077 3078 3079 3080 3081 3082 3083 3083	170	Steel pourers do do do Steel pourers' help ers Steward Stickers-in	Steel bloome Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots Steel ingots	United States
3058 3059 3061 3062 3063 3064 3066 3067 3068 3068 3070 3071 3075 3076 3076 3078 3078 3078 3078 3078 3078 3078 3078	170	Steel pourers do do do Steel pourers' help ers Steward Stickers-in	Steel ingots	United States
3059	170	do do do do Steel pourers' help ers Steward Stickers-in	Steel ingots	United States Continent of Europe Continent of Europe
3061	170	dodo	Steel ingots Steel ingots Steel ingots	Continent of Europe
3062	170	do Steel pourers' help ers	Steel ingots	Continent of Europe
3063	8	Stickers-in	Steel ingots	
3064 3065 3066 3067 3068 3070 3071 3072 3073 3074 3075 3076 3077 3078 3079 3080 3080 3081 3082 3082	8	Stickers-in	Diameter	Continent of Europe
3065 3066 3066 3067 3068 3070 3070 3071 3072 3073 3075 3075 3077 3078 3079 3080 3081 3082 3082 3083	8	Stickers-in	Bitaminous coal	Great Britain
3067	9		Finished bar iron	United States
3068 3069 3070 3071 3072 3073 3074 3075 3077 3078 3079 3080 3082 3082 3083		do	Finished bar iron Mixed iron and steel	United States United States
3069 - 3070 3071 3073 3073 3074 - 3075 3076 3077 3078 - 3079 3080 3080 3082 3083		do	Mixed from and steel	
3071 3072 3073 3074 3075 3076 3077 3078 3079 3080 3081 3082 3083	-	do	Mixed iron and steel	United States
8072 3073 3074 3075 3076 3077 3078 3079 3080 3081 3082 3083	41	Stock breakersdo	Pig iron	United States United States Northern district, U. S. Northern district, U. S. Northern district, U. S. Northern district, U. S.
3073 3074 3075 3076 3077 3078 3079 3080 3081 3082 3083	84	do	Pig iron	Northern district, U. S.
3074 3075 3076 3077 3078 3079 3080 3081 3082 3083	10	Stock preparers	Pig iron	Northern district, U. S.
3076 3077 3078 3079 3080 3081 3082 3083	_	Stock taker	Pig iron Mixed iron and steel	Great Dritain
3077 3078 3079 3080 3081 3082 3083	83	Stock unloader	Pig iron	Northern district, U. S.
3078 3079 3080 3081 3082 3083	103	Stockersdo	Pig iron	Northern district, U. S. Southern district, U. S.
3079 3080 3081 3082 3083	100	do	Pig iron	Continent of Europe
3081 3082 3083	7	do	Muck bar fron	United States
3082 3083	0	do	Muck bar iron	United States
3083	26	do	Muck bar iron Steel ingots	United States United States
	5	do	Steel ingots	United States
	_	do	Mixed iron and steel Mixed iron and steel	United States
3085 -	-	do	Mixed iron and steel Mixed iron and steel	United States
3086 -		do	Mixed from and steel	United States
3088 -		do	Mixed iron and steel	United States
3089 -	_	do	Mixed iron and steel	United States
3000 -	_	do	Mixed iron and steel	United States
3091 -		do	Mixed iron and steel Mixed iron and steel	Great Britain
3093	7	Stockers, boss	Muck bar iron	United States
3094	9	do	Muck bar iron	United States
3095	26	do	Muck bar iron Mixed iron and steel	United States
3097		do	Mixed iron and steel	United States
3098	1	Stocker and unloader	Steel ingots	United States. United States. United States. Northern district, U. S.
3099	32	Stockers and water tenders	Pig iron	Northern district, U.S.
3100 -	58	Stockers' helpers	Pig iron	Continent of Europe Northern district, U. S.
3102 -	- 48	Stokers	Mixed iron and steel	United States.
3103 -	_	do	Mixed iron and steel	United States
3104	-	Stone breaker	Mixed iron and steel	Great Britain
3105	1	Stone wheelers	Steel ingots	United States
3107	42	Stone wheelers	Iron ore	United States
3108	7	Stopper carriers	Steel ingots	United States
3109	12	Stopper carriers and stopper setters	Steel ingots	United States
3110	2 7	Stopper carrier and vessel cinder Stopper setters	Steel ingots	United States United States
3112		do	Steel ingota	Continent of Europe
3113		Stoppermakers	Mixed iron and steel	Great Britain
3114	7	Stoppermakers	Steel ingota	United States
3115		do	Steel blooms	Continent of Europe United States
3117		do	Mixed iron and steel	Continent of Europe
3118		do	Mixed iron and steel	Great Britain

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no estatement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition fo	r period.		had conti	f workmen nuous em- nent.	Mar-
days in the period.	or daily rate near- est to average	Different	Daysof v	rork done.	Earn	ings.	Necessary	Consequent average earnings	gin al nuu ber
	daily earnings.	employéa.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
155 133 132 230 777 78 1155 167 168 168 168 168 168 168 168 168 168 168	#0. 84 . 67 1 . 57 1 . 57 1 . 57 1 . 6. 57 1 . 6. 57 1 . 48 2 . 69 1 . 1. 50 1 . 1. 40 1 . 1. 59 1 . 1. 50 1 . 1. 40 1 . 1. 59 1 . 1. 50 2 . 1. 42 1 . 1. 50 2 . 1. 42 1 . 1. 50 2 . 1. 50 3 . 2. 50 4 . 1. 50 3 . 2. 50 4 . 1. 50 3 . 2. 50 4 . 50 5 . 50 5	222211222334611522331166111777558336623111224661111224661111224661111224661111122668111111226681111111111	25 297 209 277 209 201 201 201 201 201 201 201 201 201 201	13 149 135 49 68 127 185 68 127 185 68 149 224 (a) 56 20 238 326 105 31 48 20 269 222 145 62 33 66 34 149 180 238 243 66 34 149 180 269 180 279 180 288 192 192 192 192 192 193 181 188 294 188 294 188 294 188 294 188 294 188 294 188 294 188 294 188 294 185 83 388 192 192 192 193 181 185 888 192 193 181 185 888 181 294 185 833 181 181 285 888 2884 288 2885 181 294 185 883 181 285 888 2886 344 349 1881 294 1885 388 388 388 388 388 388 388 388 388	\$21 200 202 22 1, 417 28 28 128 89 128 89 128 666 671 647 647 648 28 28 2, 471 1, 991 1, 991 1, 991 1, 991 1, 991 1, 991 1, 191 1, 191	\$111 100 1311 28 129 1398 1, 216 58 18 122 14 1210 1336 209 125 41 190 472 105 47 68 28 28 353 27 141 351 218 131 218 131 218 131 218 22 211 2336 488 27 27 27 27 27 27 27 27 27 27 27 27 27	0.95 0.95 0.95 0.1.792 0.86 0.86 0.86 0.86 0.86 0.86 0.86 0.86	\$130 211 152 230 250 985 1, 512 666 255 37 21 245 267 429 220 230 230 688 111 478 403 501 179 (a) 523 562 190 195 473 661 195 473 661 195 473 661 117 (a) 523 552 5551 463 501 172 1, 210 288 5522 609 25 5551 551 456 389 1, 171 8 8 177 482 188 276 621 288 174 288 276 281 282 282 283 284 284 285 295 295 295 295 295 295 295 295 295 29	300 300 300 300 300 300 300 300 300 300

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presentation the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
3120	10	Storekeepera	Plg iron	Northern district, U.S.
3121	58 101	do	Pig iron	Northern district, U.S. Northern district, U.S. Southern district, U.S.
3122 3123	29	do	Pig iron Finished bar iron	Great Britain
3124	1	do	Steel ingots	United States
3125	_	do	Steel billets	United States
3126	_	do	Mixed iron and steel Mixed iron and steel	United States
3127 3128	148	Storekeeper and timekeeper	Bituminous coal	Dominion of Canada
3129		Storekeepers' helper	Steel hillets	United States
3130	36	Store cleaners	Pig iron	Court Pritain
3131	37	Stove tenders	Pig iron	Northern district II S
3132	42	do	Pig iron	Great Britain Northern district, U.S. Northern district, U.S.
3134	_	do	Pig iron	Great Britain
3135	10	Stovemendo	Pig iron	Northern district, U.S.
3136 3137	22 32	lo	Pig iron	Northern district, U.S. Northern district, U.S.
3138	56	do	Pig iron	Northern district, U.S.
3139	67	do	Pig iron	Northern district, U.S.
3140	101	do	Pig iron	Southern district, U.S.
3141	109	do	Pig iron	Northern district, U.S. Northern district, U.S. Southern district, U.S. Southern district, U.S. Southern district, U.S. Southern district, U.S.
3141		Stovemen's helper	Pig iron	Continent of Europe
3144	10	Stovemen's helper	Pig iron Finished bar iron	Northern district, U.S.
3145	8	do	Finished bar iron	United States
3147	29	do	Finished bar iron	Great Britain
3148	-	do	Steel rails	Continent of Europe
3149		do	Mixed iron and steel Mixed iron and steel	United States
3:51		do	Mixed iron and steel	United States
3152	_	do	Mixed iron and stoel	United States
3153		do	Mixed iron and steel Mixed iron and steel	United States
3155		do	Mixed iron and steel	Continent of Europe
3156	_	do	Mixed iron and steel	Continent of Europe
3157		do	Mixed fron and steel Mixed fron and steel	Great Britain
3158		Straightener and water boy	Mixed iron and steel	United States
3160	_	Straighteners and weighmen.	Mixed iron and steel	Continent of Europe
3161	43	Strikers	Iron ore Steel ingots	United States Continent of Europe
3162 3163	-	Supervisor	Steel rails	Continent of Europe
3164	72	Surface boss. Surveyor, assistant	Iron ore	United States
3165	170	Surveyor, assistant	Bituminous coal Mixed iron and steel	Great Britain
3167	100	Sweepers	I'lg iron	United States. Southern district, U.S.
3168	36	do	Pig iron	Great Britain
3169	37	do	Pig iron	Great Britain
3170 3171	1	do	Steel billets	United States
3172		do	Mixed iron and atcel	United States
3173	_	do	Mixed iron and steel	United States
3174		dodo	Mixed iron and steel Mixed iron and steel	Continent of Europe
3176		do	Mixed iron and steel	Great Britain
3177	_	do	Mixed iron and steel	
3178	1	Sweeper and water carrier	Mixed iron and steel Steel ingots	Great BritainUnited States
3180	-	Switchmen	Mixed iron and steel	United States
3181	_	do	Mixed iron and steel	United States
3182		do	Mixed iron and steel	United States Continent of Europe
3184		Table boys	Steel billets	United States
3185	-	Tablemen Tableman and transmitter	Steel billets	United States
31.86		Tableman and transmitter Tap wheelers	Steel billets	United States

one establishment caunet be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings,		Actual	ondition fo	r period.		had conti	if workmen nuous em- ment.	Mar
days in the period.	or daily rate near- est to average	Different	Days of	work done.	Earr	ings.	Necessary	Consequent average earnings	al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
365 365 365 383 202 313 202 313 202 313 365 365 365 365 365 365 365 365 365 36	\$1.65 1.40 1.97 1.64 1.57 1.69 1.457 1.61 1.50 1.457 1.61 1.50 1.65 1.65 1.65 1.65 1.65 1.75 1.69 1.75 1.69 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.75 1.23 1.33 1.33 1.33 1.34 1.34 1.34 1.34 1.3	11113112111222132424246126114720043758211234211139421644222841512247315	339 14 184 184 184 189 99 402 105 295 131 172 7337 611 174 274 517 274 517 351 1,566 1,338 127 2,258 2,444 3,019 3,213 3,714 170 4,24 170 7,351 1,566 1,338 388 790 2,444 3,11 170 4,11 1,11 1,11 1,11 1,11 1,11 1,11 1,1	339 14 184 194 199 134 105 295 312 73 101 87 357 135 357 214 312 299 340 116 80 69 86 351 131 223 127 2 240 60 144 31 77 43 60 244 31 77 43 88 84 90 90 147 222 2-9 86 140 144 27 57 50 116 148 244 51 149 88 84	\$559 20 276 680 102 26 680 102 26 680 102 27 68 680 102 27 68 680 102 27 68 680 102 28 11 68 680 102 28 11 68 68 680 102 28 11 68 68 680 102 28 11 68 68 680 102 28 11 68 68 68 68 68 68 68 68 68 68 68 68 68	\$550 200 276 226 220 190 428 53 560 102 53 557 767 767 767 767 141 655 357 161 149 640 108 109 45 102 218 218 219 45 41 119 45 41 119 45 41 119 45 41 119 45 41 119 45 41 119 45 41 119 45 41 119 45 41 119 45 41 41 41 41 41 41 41 41 41 41 41 41 41	0.93 0.04 1.00 1.052 0.940 1.036 1.036 1.036 1.036 1.036 1.036 1.11 1.057 1.056 1.058 1.039 1.751 1.056 1.058 1.039 1.058 1.039 1.058 1.039 1.058 1.039 1.058 1.039 1.058 1.039 1.058 1.03	\$602 521 276 514 366 514 536 5454 5456 555 555 556 896 7855 141 709 610 62 247 386 626 247 386 626 247 238 487 230 228 487 230 248 411 188 456 627 1124 256 438 373 149 112 128 244 452 253 259 370 370 370 370 370 370 370 370 370 370	3122 3122 3122 3122 3123 3123 3133 3133

s Paid by the quantity. The daily rate of pay and days of work done cannot be given

TABLE XIII .- SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presenta-for the establishment was obtained. In referring from this table to those on production by means of

Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
3188	101	Tappera cupo'a Teamstors	Steel ingota	United States
3190	9 26	do	Mack bar iron Muck bar iron	United States
3192	20	do	Mixed from and steel	United States United States
3193		do	Mixed from and steel Mixed from and steel	United States United States
3195	26	do	Bituminous coal	United States
3196 3197		dodo	Bituminous coal Bituminous coal	United States
1198	13	do	Coke	United States
3109 3200	51 72	do	Iron ore	United States
3201	9	Teamsters (with teams)	Iron ore	United States Northern district, U.S. Northern district, U.S.
3202 3203	32	do	Pig iron	Northern district, U.S.
3204	42	do	Pig iron	Northern district, U.S. Northern district, U.S. Northern district, U.S.
3205 3206	83	do	l'ig iron Mixed iron and steel	Northern district, U.S. United States
3200	45	do	Iron ore	United States
3208 3200	-	Teamster and tram-road repairer	Iron ore	United States Great Britain
3210		Teemer Telegraphmen	Mixed iron and steel Steel blooms	United States
3211	-	do	Mixed iron and steel	United States
3212	7	Test catchers	Steel ingota	United States
3214	-	Test boys. Test catchers Test preparer Test preparer (boy)	Steel ingots	Great Britain
3215 3216	1	Test preparer (boy)	Mixed iron and steel Steel ingots	Great Britain
3217	5	do	Steel incote	United States
3218	26	do Timbermen	Steel ingots Bituminous coal	Continent of Europe United States
3226 3221	109	do	Bituminous coal	United States
3221	148	do	Bituminous coal	United States
3223	170	do	Bituminous coal	Great Britain
3224 3225	12	do	Iron ore	United States
3226	42	do	Iron ore	United States
3227	45 51	do	Iron ore	United States
3229	56	do	Iron ore	United States
3230 3231	59 61	do	Iron ore	United States
3232	69	do	Iron ore	United States
3233 3234	72 80	do	Iron ore	United States
3235	42	Timbermen, boss	Iron ore	United States
3236 3237	72	Timekanara	Pig iron	
3238	10	do	Pig iron	Northern district, U.S.
3239 3240	41 58	do	Pig irou	Northern district, U.S. Northern district, U.S. Northern district, U.S. Northern district, U.S.
3241	1	do	Pig iron	United States
3242 3243	_	do	Mixed fron and steel	United States
3244		do	Mixed iron and steel Mixed iron and steel	United States United States
3245	-	do	Mixed iron and steel	Great Britain
3246	72 36	Timekeeper and number taker	Pig iron	United States
3248		Timekeeper and vardmaster	Mixed from and steel	United States
3249 3250		Tippers	Pig iron Mixed iron and steel	Great Britain Great Britain
3251	96	Tipplemendo Trongsmendo	Bituminous coal	United States
3252 3253	107	Ton gamen	Bituminous coal	United States United States
3254		do	Steel billets Mixed from and steel	Great Britain
3255	1	Tongemen and transmitters	Mixed iron and steel	Great Britain

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion. Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.)

Work-	Actual daily earnings,		Actual c	ondition for	period.		Condition in had continuous ploys		Mar
days in the period.	or daily rate near est to average	Different employés.	Days of	work done.	Eart	nings.	Necessary employés.	Consequent average earnings	gin- al num ber.
1	daily earnings.		Total.	Average.	Total.	Average.	omproj ca	ployé.	
313 313 313 313 313 313 313 313 313 313	\$3.06\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	402314321222488122324112144111118131223233311111121111111111	499 516 359 373 313 424 793 3127 3000 893 358 463 447 296 466 466 467 47 412 47 47 47 47 412 48 48 49 49 49 49 49 49 49 49 49 49 49 49 49	125 52 180 161 61 300 61 62 28 179 116 128 179 116 129 9 9 119 123 15 4 (a) 89 119 203 80 97 184 166 128 175 252 168 24 168 169 173 188 166 128 175 170 203 80 97 184 166 128 175 176 170 181 181 188 186 188 188 188 188 188 188	\$1, 530 625 480 391 1, 117 1, 144 463 463 1, 214 436 1, 431 1, 551 2, 363 1, 314 1, 551 2, 363 1, 314 1, 551 2, 363 1, 314 1, 551 2, 363 1, 314 1, 314 1, 551 2, 363 3, 317 3, 317	\$383 533 240 291 391 135 86 316 316 316 316 317 218 221 151 163 35 36 315 37 115 129 140 129 140 141 141 141 141 141 141 141	1.59 2.80 1.10 2.81 1.00 2.81 1.48 2.53 0.047 2.81 1.48 1.49 0.04 1.148 1.49 0.04 1.149 0.06 1.418 1.42 0.06 1.418 1.42 0.06 1.418 0.618 0.	\$900 187 418 391 391 391 391 441 313 663 935 935 935 935 935 935 935 93	311 311 311 311 311 311 311 311 311 311

a Paid by the quantity. The daily rate of pay and days of work done cannot be given.

TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

[Each line shows the total of an occupation in an establishment. In a like occupation the facts for the periods are of equal length. The establishment numbers relate to the cost of production presents for the establishment was obtained. In referring from this table to those on production by means of

-				
Mar- gin- al num- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
3257 3258	42	Tool boys	Iron ore	United States
3259	18	Toolmen	Muck bar iron Bituminous coal	United States
3260	26	do	Bituminous coal	United States
3261 3262	55	do	Bituminous coal	United States
3263		do	Bituminous coal	United States
3264 3265		Tracklayer and trapper	Bituminous coal	United States
3265	67	Trackmen	Pig iron Mixed iron and steel	Northern district, U.S.
3267	109	do	Bituminous coal	United States
3268	72	Tram-road repairers	Iron ore	United States
3269 3276		Tram-road repairers	Bituminous coal	United States
3271	1	Trammersdo	Iron ore	United States
3272	72	do	Iron ore	United States
3273 3274	1	Transfermen	Steel ingots	United States
3275	=	Transmitters car	Steel billets	United States
3276	_	Transmitters, hook	Steel billets	United States
3277 3278		Transmitters, car Transmitters, hook Transmitters, hydraulic	Steel billets	United States
3279	18	Transportmen Trappersdo	Bituminous coal	United States
3280	26	do	Bitumluous coal	United States
3281	55 96	do	Bituminous coal	United States
3283	109	do	Bituminous coal	United States
3284		do	Bituminous coal	United States
3285 3286	_	do	Bituminous coal	United States
3287	148	do	Bituminous coal	United States Dominion of Canada
3288	170	do	Bituminous coal	Great Britain
3289 3290	18 26	Trimmers	Bituminous coal	United States
3291	55	do	Bituminous coal	United States
3292	96	do	Bitumipous coal	United States
3293 3294	72	do	Bituminous coal	United States
3295	12	Trimmer, boss	Iron ore Bituminous coal	United States
3296	1	Truckmendo	Iron ore	United States
3297 3298	43 56	do	Iron ore	United States
3299	59	do	Iron ore	United States
3300	61	do	Iron ore	United States
3301		Turbine men	Steel rails Mixed iron and steel	Continent of Enrope
3303		Turn-overs	Mixed iron and steel	Great Britain Continent of Europe
3304 3305	_	do	Mixed iron and steel	Continent of Europe Continent of Europe Continent of Europe
3306		do Turners' helpers Tuyé re fitter	Mixed iron and steel Mixed iron and steel	Continent of Europe
3307		Tuyére fitter	Pig iron	Great Britain
3308	58	Unio aders	Pig iron	Great Britain. Northern district, U.S
3309	1	do	Steel ingots	United StatesUnited States
3311		do	Mixed iron and steel	Great Retain
3312	2	do	Steel ingota	
3314	7	Versel repairers	Steel ingota	United States
3315	2	Versel acrapers	Steel ingota	United States
3316	1		Steel ingots	United States
3318	1 2	Vesselmendo	Steel ingots	United States United States
3319	7	do	Steel ingota Steel ingota Steel ingota	United States
3320 -	_	do	Steel ingota	Continent of Europe
	170	Wagon builders an 1 repairers	Mixed iron and steel Bituminous coal	Great BritainGreat Britain
3322				

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XL. Where no establishment number is given no statement of cost of preduction these numbers, note should be taken of the industry, as a new series of numbers is used for each.

Work-	Actual daily earnings,		Actual	condition fo	r period.	1	Condition i had contin plays		Mar
days in the period.	or daily rate near est to average	Different	Days of v	vork done.	Earn	ings.	Necessary	Consequent average earnings	al num ber.
	daily earnings.	employés.	Total.	Average.	Total.	Average.	employés.	per em- ployé.	
313 313 313 313 313 313 313 313 313 313	\$0.65 1.37 1.75 2.06 1.25 2.06 1.25 2.15 1.50 1.40 1.43 2.15 1.50 1.91 2.165 2.19 2.165 2.19 3.40 1.50 1.60 1.60 1.60 1.60 1.60 1.60 1.60 1.6	111111688 44 1 9 9 7 9 4 4 1 9 6 6 2 9 9 2 2 1 1 1 3 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1	2, 511 115 143 1222 209 656 317 6 6 956 611 431 8100 504 4, 213 160 205 273 148 6, 411 1, 459 213 228 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 219 24 25 25 26 26 26 27 27 27 27 27 27 27 27 27 27 27 27 27	228 115 143 141 269 60 317 60 317 61 295 133 76 108 81 77 85 45 40 164 163 137 159 122 111 89 272 235 75 72 111 89 272 235 75 22 111 89 272 235 75 22 111 89 272 235 75 22 111 89 272 235 75 76 122 131 101 89 272 235 75 76 122 111 89 272 235 75 76 122 111 89 272 235 75 76 122 111 89 272 235 75 76 122 111 86 (a) 20 41 41 46 (a) 30 144 46 66 (a) 77 77	\$1, 638 158 251 418 428 428 413 1, 279 9 413 1, 141 1, 279 807 534 448 828 807 534 438 198 807 2, 815 528 607 2, 815 607 2, 815 607 2, 815 607 607 607 607 607 607 607 607	\$149 158 251 104 1092 413 100 100 208 86 152 147 127 138 143 133 38 86 143 177 134 108 33 38 165 267 177 180 180 180 180 180 180 180 180 180 180	8 0 74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$204 213 277 478 683 683 683 447 438 447 390 600 673 325 443 325 137 138 248 251 157 158 251 159 490 490 491 492 493 497 390 490 491 492 493 493 494 495 497 496 497 498 497 498 497 498 497 498 497 498 497 498 498 497 498 498 497 498 498 498 498 499 499 490 498 498 499 499 490 490 490 490 490 490	32 32 32 32 32 32 32 32 32 32 32 32 32 3

a Paid by the quantity. The daily rate of pay and days of work done can not be given. b Number of employee not given.

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. TABLE XIII.—SUMMARY OF ACTUAL AND THEORETICAL

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Mar- gin- al sum- ber.	Es- tab- lish- ment num- ber.	Occupation.	Industry.	Locality.
3324 33:25 33:26	42 29	Wagonmakers	Iron ore	United States Great Britain United States
3327 3328	29	Wash heaters	Mixed iron and steel Finished bar iron	Continent of Europe Great Britain
3329 3330	29	Wash heaters helpers	Mixed iron and steel Finished bar iron	Great Britain
3331 3332 3333	56 61	Washermen	Mixed from and steel Iron ore	Great Britain United States United States
3334	32	Watchmen	Pig iron	United States. Northern district, U.S. Northern district, U.S.
3335 3336	58	do	Pig iron	Northern district, U. S. United States
3337	26	do	Muck bar iron	United States
3338	36	do	Muck bar iron	Great Britain
3339	1	do	Steel ingots	United States
3340 3341	7	. do	Steel ingots	United States
3342	_	do	Steel blooms	United States
3343	-	do	Mixed iron and steel	United States
3344 3345	-	do	Mixed iron and steel Mixed iron and steel	United States
3346		(lo	Mixed iron and steel	United States
3347	_		Mixed iron and steel	United States
3348 3349		do	Mixed iron and steel Mixed iron and steel	Continent of Europe Continent of Europe
3350		do	Mixed iron and steel	Continent of Europe
3351	-	,do	Mixed iron and steel	Continent of Europe
3352		do	Mixed from and steel	Great Britain
3354	26	do	Bituminous coal	United States
3355 3356	-	do	Bituminous coal	United States United States
3357		do	Bituminous coal	United States
3358	148	do	Bituminous coal	Dominton of Canada
3359 3360	156	do	Bituminous coal	Continent of Europe Great Britain
3361	6	do	Coke	United States
3362	13	do	Coke	United States
3363 3364	23	do	Coke	United States United States
3365	-29	do	Coke	United States
3366		do	Coke	Continent of Europe
3367	42	do	Iron ore	United States United States
3369	46	do	Iron ore	United States
3370	69 72	do	Iron ore	United States
3371 3372	16	Water boilers	Iron ore Bituminous coal	United States
3373	9	Water boys	Pig iron	United States. United States. Northern district, U.S. Northern district, U.S. Northern district, U.S. Southern district, U.S. Southern district, U.S.
3374 3375	10 58	do	Pig iron	Northern district, U.S.
3376	95	do	Pig iron	Southern district, U.S.
3377	109	do	Pig iron	
337H 3379	7	do	Steel ingota	United States
3380	- 1	do	Steel blooms	United States
3381		do	Steel rails	Continent of Europe
3382 3383		dodo	Mixed iron and steel Mixed iron and steel	United States United States
3384		do	Mixed fron and steel	United States
3385	-	do	Mixed iron and steel	United States
3386 3387	107	do	Bituminous coal	United States
3388	23	do	Coke	United States
3389	12	do	Iron ore	United States
3390	41	do	Iron ore	United States
3391 3392	42	do	Iron ore	United States

one establishment cannot be compared with those for another , except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note about be taken of the industry, as a new series of numbers is used for each.]

Work.	Actual daily earnings,		Actual o	condition fo	or period.		had conti	if workmen nuous.em- ment.	Mar
days in the period.	or daily rate near- est to average daily	Different employés.	Days of w	rork done.	Earn	inge.	Necessary employés.	Consequent average earnings	gin- al num- ber.
	earnings.	ompio, os.	Total.	Average.	Total	Average.		per em- ployé.	
313 108	\$1.545 1.005	2 2	5°4 236	292 118	\$903 237	\$452 119	1.87 2.19	\$484 108	3324 3325
318	1.54	6	1, 428 92	238 92	2, 201 53	367 53	4. 57 1. 00	482 53	3326 3327
99 156	2.27	2	186	93	423	213	1.88	225	3328
156	4.76	3	231 116	126 116	1, 196 83	508 83	1. 61 1. 17	743 71	3329 3330
156	. 481	2 2	251	126 209	123	61	1.61	76	3331
313 155	1. 0 2 1. 10	2	418 121	209	427 133	214 133	1. 33 0. 78	320 170	3332 3323
305	1.50	1 1	317	121 317	473	473	0.87	845	3331
365 365	1. GO 1. 50	1	361	361 297	578 446	578 416	0. 99 0. 81	584 548	3335 3336
313	2.07	1 8	207 773	97	1, 50%	200	2.47	647	3337
126 365	. 95) 1. 75	1	135	135	129 874	129	1.07 1.37	120 638	3338
292	1.55	13	500 364	28 182	561	67 282	1. 25	452	3340
235 292	1. 75 1. 58	5	1,052	210	1, 843	3C9 231	4.48	412	3341
365	2.50	3	534 335	178 235	814 838	838	1.84	462 913	3342 3343
313 365	1 771	2	328	164 378	509	285 583	1.05	543 563	3344 3345
168	1. 54 1. 52	3	1, 133	218	1, 749 5 39	l 133	3. 11 2. 10	256	2346
313	1.074	8	2, 232	279	8,744	468	7. 13	525	8347
813	. 58	1 4	1, 140	84 285	49 369	49 92	1.09 3.64	45 101	3348 3349
92 313	. 51	5	459 366	92 366	236	47 145	4.99	47 124	2350 2351
48	. 361	1 1	300 56	56	145 20	20	1. 17 1. 17	1 17	3362
53 365	. 52 1 1. 21	1 1	56 53	58	39 64	30	1 1.06 0.15	i 22	3353 3254
313	2.00	1	25	53 25	50	50	0.08	441 626	3356
365	1.64	1 1	286 25	286 25 333 78	469	460	0. 78 0. 08	599 551	3356 3357
365	1.00	1	353	353	853	853	0. 97	365	3358
91	.95	1	78 91	78 91	75 91	853 75 91	1.01 1.00	74	2350
92	1. 25	1 2	91	46	114	57	0.99	115	3360 3361
313	1.00	1	350 311	350 311	560 311	560 311	1. 12 0. 85	501 365	3303
365	1. 25	1	69	69	. 86	86	0.19	455	3364
365 363	1. 20 . 381	1 1	328 365	928 365	141 394	394	0. 90 1. 00	438 141	3363 3364 3365 3366
365	1.15	1 2	609	305	706	141 333	1.07	423	3367
313 365	1.65 1.55	2	615 859	308 359	1, 015 556	508 556	1.96 0.98	517 565	3368
313	1.00	1	166	166	178	173	0. 53	326	3360 3370
365 313	1.50 1.09	. 6	50 394	50 68	75 429	75 72	0. 14 1. 26	548 841	3371 3372
865	.601	1	345	345	429 209	209	0.95	221	3373
365 365	.85	- 3	730 627	104	623 500	63 63	2.00 1.71	312 291	3374 3375
234	1, 15	3	627 356	119	413	138	1.07	387	2976
365 133	. 50	9	906 368	101	458 258	51 29	2.49 2.79	184	2377 3378
230 230	. 69	6	761	127	466	78	3.31	141	2879
78	. 60	3	20 73	73	12 28	28	0.69 0.94	138	3380 3381
313	. 65	1	17	17	11	ii	0.65	30 203	3382
155 313	1 .80	5	110	22 36	99 29	11 20 29	0. 71 0. 12	140	2383 2384
313	1.25	1	853	213	1,067	267	1 2.73	303	2325
313	1.75	2 2	130 188	65	227 75	114 38	0.43	547 125	2386
218	.634	4	196	49	124	31	0.63	196	2388
313 313		3	59°s	298 125	70s 416	354 83	1.90 2.00	208	3380 3380
313	. 47	30	4,950	163	2.815	83 77	15.81	146	2301
217	. 75	1	210	210	157	157	u 0.97	142	

(Ea. the per for the Margin-al num-ber.

one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XI. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	Actual daily earnings, or daily		Actual	condition fo	r period.			if workmen anous em- nent.	Mar
days in the period.	rate near- est to average	Different	Days of w	ork done.	Earn	ings.	Necessary	Consequent average earnings	gin- al num- ber.
	daily earnings.	employés.	Total.	Average.	Total	Average.	employés.	per em- ployé.	
313 313 313 313 313 313 313 313 313 313	90. 75 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	119711240482322120133484823148181212182226814458833311286221171551343	136 688 952 357 130 406 155 500 501 155 500 475 501 155 235 478 475 475 238 408 1, 238 185 150 201 218 230 201 201 217 217 217 217 217 217 217 217 217 21	188 68 68 68 68 69 190 248 300 248 300 253 291 111 3555 291 113 113 113 113 113 113 113 113 113 1	\$93 34 536 487 177 400 868 231 455 469 1,511 888 589 544 495 546 410 200 1,031 33 31 77 620 634 634 637 720 620 634 631 106 1,046 1,	\$93 34 60 70 177 40 434 434 196 748 235 504 196 748 265 673 265 673 245 673 245 673 270 720 720 720 720 720 720 720 720 720	0.43 0.204 0.066 1.164 0.066 0.066 1.080 1.080 1.184 1.190 1.1	\$214 157 176 427 275 548 466 699 760 720 730 514 408 517 303 316 509 92 115 115 120 720 720 730 730 740 750 750 750 750 750 750 750 75	3393 3393 3393 3393 3400 3400 3411 3411 3411 3411 3412 342 342 342 342 342 342 342 342 342 34

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one establishment cannot be compared with those for another (except as to daily rate of pay), unless tion, Tables I to XL. Where no establishment number is given no statement of cost of production these numbers, note should be taken of the industry, as a new series of numbers is used for each.]

Work-	daily earnings, or daily		Actual c	ondition fo	r period.		had conti	if workmen nuous em- ment.	Mar- gin-
in the	rate near- est to	Different		rork done.	Earn	ings.	Necessary	Consequent average earnings	
period.	daily carnings.	employés.	Total	Average.	Total	Average.	employée.	per em- ployé.	
79 48	\$0, 62 <u>1</u>	2 2 5 1 2 2 2 2 1 2	146 92	73 46	\$01 56	\$46 28	1. 85 1. 92	\$49 29	3462 3433
53	.601	1 .	223	45	135	27	4.21	22	3464
158	1. 73	l i	154	154	269	269	0. 97	278	3465
313	1.69	2	3:8	164	563	269 278	1.05	830	3466
313	2.01	Ž	833	167	670	835	1.06	630	3467
313	1.00	2	612	306	611	206	1. 95	312	3468
91	1.21	1	78	78	97	97	0.86	118	3460
365	. 58	2	38	19	22	11	0. 10	211	3470
· 313	1. 50	1	25	25	38	38	.0.06	476	8471
313	1.60	1 1	190	190	296	298	0.61	491	8472
313	1. 16	1 1	286	286	332	832	0.91	363	8478
313	. 87	16	8, 992	250	3, 481	218	12,75	273	8474
91	.61	1 1	64	64	38	35 99	0.70	54	8475
90	. 76	2	258	129	198	99	2.61	76	8476
156 99	1.071	20	2,614	131	2, 816	141 77	16.75 3.73	168	3477 3478
313	.84	•	368 240	93 240	309 360	380	0.77	83 496	3479
313	1.58½ 3.00	1 1	240	1	3	3	0.00	939	3460
313	3. 00 2. 25		าเ	111	25	25	0.00	711	3481
48	. 49	1 8 5 5	309	29	133	19	6.44	24	8482
365	1.53	۱ ۴	1.063	213	1, 623	323	2.91	558	3483
365	1.57	5	1,909	183	1, 423	225	249	572	3484
365	2, 25	li	291	291	655	285 665 642	0. 80	822	3485
365	2.00	l î	321	321	612	642	0.88	730	3486
122	1.50	l i	122	122	183	183	1.00	183	3487
313	1. 73	l î	227	227	389	380	0.73	536	3488
813	2.72	1	313	313	. 852	852	1.00	852	3489
251	2, 25	1	263	263	596	596	1.05	589	3440
313	. 76	16	1, 153	73	874	55	1.00	237	3491

OF THE COMMISSIONER OF LABOR.

RY OF ACTUAL AND THEORETICAL TIME AND EARN-INGS BY INDUSTRIES.

to two working days in the period are shown for each occupation, but here only for the establishment as a whole. The actual daily earnings, or daily rate ngs of Table XII here, of course, becomes actual average daily earnings, il earnings divided by the total days of work done in each establishment.]

A .- PIG IRON.

-01		Act-		ctual co	ndition	for perio	d.	men bad	n if work- continu- loyment.
	of the period.	aver- age daily earn-	Dif- ferent em-	Days of		Earni	ıgs.	Neces-	Conse- quent average
		ings.	pley- 6s.	Total.	Aver-	Total.	Average.	ployés.	earnings per employé.
Northern distr		\$2. 03	310	25, 735	83	a \$52, 238	\$160	71.18	8734
do	l year l year l year l year l year l year l year l year l year l year d months by mos d months months months	1	507	25 000	89 121 90 198 188 (/) 178 96 114 75 65 56	875, 519 c42, 371 d49, 296 58, 272 c31, 593 h187, 677 640, 029 j30, 746 17, 161 k7, 534 t4, 729 m44, 327	149 192 154 304 277 (g) 288 168 167 86 99 76	127. 65 73. 76 83. 73 100, 29 60. 78 (7) 76. 33 09. 90 74. 23 52. 38 35. 44 90. 44	502 574 589 533 520 (7) 569 308 231 144 133 490
do	1 year 1 year 1 year 1 mos 6 months urope 3 months 3 months 4 mos 3 months	1	36 110	22 36 76 2,712 8,565 18,137 11,618 20,596	80 107 49 (/) 75 78 132 79 79	n44, 956 o15, 173 p 23, 287 q 54, 433 r1, 895 5, 478 s18, 412 e7, 761 t12, 795	98 131 65 66 53 50 134 52 49	105, 59 35, 92 52, 05 (f) 30, 14 95, 11 134, 36 130, 62 231, 58	425 422 448 (5) 62 58 137 59 53

- a This amount includes the wages in the production of both Bessomer and foundery pig iron, besides \$10,733 paid to outside persons for labor done under contract, while the statement for this catablishment on page 51 is for Bessemer pig iron only.

 b In addition \$2,667 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 52.

 c The sarrings here shown are for one year. The statement for this establishment on page 51 is for six months only.

- at months only.

 d The earnings here shown include amounts paid a few employes not in the pig from department
 which is was impossible to exclude. The statement for this cetablishment on page 51 is for pig from
- ealy.

 The sarnings here shown are for one year. The statement for this establishment on page 51 is for nine months only.

 If Some employée were paid by the quantity, hence the daily rate of pay and days of work dense
- J Some employee were paint by the quantity of the given.

 g Number of employés in a few occupations not given.

 A The earnings here shown are for one year. The statement for this establishment on page 32 is for three months only.

 (In addition \$1,361 was paid to outside persons for labor done under contract, which is included in
- the statements for this establishment on pages 52 and 592.

 j The carnings shown here and for this establishment on page 51, although for the same length of time, are for different periods.
- I The earnings shown here and for this establishment on page 52 although for the same length of time, are for different periods.

 I In addition \$140 was paid to outside persons for labor done under contract, which is included in
- In addition \$1.40 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 52 and 592.

 In addition \$2.571 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 52 and 592.

 In la addition \$3.628 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 52 and 592.

 It is destroyed to this establishment on pages 52 and 592.

 It is contained to this establishment on pages 52 and 593.

 The statements for this establishment on pages 52 and 593.

 The statement for this catablishment on pages 52 and 593.

 The statement for this catablishment on pages 52 and 593.

 The statement for this catablishment on pages 52 and 593.

- of The earnings here shown are for six menths only. The statement for this establishment on page 43 is for one year.
- The sarnings here shown are for three menths. The statement for this establishment on page 51
- is for one month o gr.

 s The caraings here shows are for only a part of the employes, but they are thought to be fairly
- representative.

 (The carnings here shown are for three menths only. The statement for this satablishment on page 81 is for eld menths.

TABLE XIV.—SUMMARY OF ACTUAL AND THEORETICAL TIME AND EARN-INGS BY INDUSTRIES—Continued.

[In the preceding table the working days in the period are shown for each occupation, but here only the length of the period for the establishment as a whole. The actual daily earnings, or daily rate nearost to average daily earnings of Table XII here, of course, becomes actual average daily earnings as it is the quotient of the total earnings divided by the total days of work done in each establishment.)

B .- MUCK BAR IRON.

Es-			Act-	Δ	ctual co	ndition	for perio	d.	men ba	n if work- d continu- ployment.
tab- lish- ment	Locality.	Length of the period.	aver-	Dif- ferent	Days of		Earni	ugs.	Neces-	Conse- quent
ber.			earn- ings.	em-	100	Average.	Total.	Average.	sary em- ployés.	earnings per employé.
9 17 26 7 36	United Statesdododododododo	1 year 1 year 1 year 6 months 4 months	2. 60½ 1. 91½ 2. 38½	169 284 272 247 17	24, 685 26, 241 34, 060 10, 777 1, 990	146 92 125 44 117	\$54, 886 a 68, 374 b 65, 204 25, 682 c 1, 853	\$325 241 240 104 109	83. 14 91. 48 117. 38 73. 68 19. 81	\$660 747 555 349 93

C .- FINISHED BAR IRON.

Ω	United States Great Britain	l vear	2.681	86	11, 679	136	31, 359	365	20.82	758	
---	--------------------------------	--------	-------	----	---------	-----	---------	-----	-------	-----	--

e The earnings here shown include amounts paid a few employés not in the finished bar iron department. The statement for this establishment on page 127 is for finished bar iron only.

b The earnings here shown are for four months only. The statement for this establishment on page 127 is for one year.

STERL INGOTS.

	United States	1 year	22 621	921	49, 048	53	\$99, 891	\$108	155, 29	***
-	United States	91 mos		295	32, 101	109	4 97, 080	329	138. 42	\$64
4	do			218	15, 664	72	b 36, 848	169	115.06	
- 4	do	5 months		210	3, 174	45	e 5, 663	80	24.07	32
9	Continent of Europe.			88	5, 740	65	4, 088	46	74.55	23
-	do	3 months		256	14, 683	57	9, 839	38	188, 23	5
_	40	1 month.		186	3, 316	18	2, 452	13	122, 18	2

a The earnings here shown are for nine and one-half months only. The statement for this establishment on page 155 is for one year.

b The earnings here shown are for only a part of the employes for twenty-four weeks. The atno-ment for this establishment on page 155 is for all the employes for twenty-five weeks.

c The earnings here shown are for five months and probably for only a part of the employes. The statement for this establishment on page 155 is for all the employes for six months.

R.-STEEL BILLETS.

-	United States	8 months	\$2.06	309	29, 261	73	\$60, 284	\$151	143. 87	9419
		F	.—8T	EEL	BLO	oms.				
=	United Statesdo	9) mos 5) mos	\$2.43 2.12	453 195	37, 043 15, 194	83 78	\$89, 944 32, 226	\$199 165	153. 63 110. 79	\$578 291
			G8	TEE	L BA	LS.				
=	Continent of Europe		\$1. 03 <u>}</u> . 72	55 388	3, 587 20, 977	65 54	\$3, 896 15, 097	\$71 39	46. 61 208. 96	\$94 56
	G D- 005	9.7								

H. Ex. 265-

a In addition \$2.642 was paid to outside persons for labor done at \$1.31 per day, which is included in the statements for this establishment on pages 113 and 593.

b In addition \$1,697 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 113 and 593.

c The earnings here shown are for only a part of the employes for four months. The statement for this establishment on page 113 is for all the employes for one year.

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TABLE XIV.—SUMMARY OF ACTUAL AND THEORETICAL TIME AND EARN-INGS BY INDUSTRIES—Concluded.

[In the preceding table the working days in the period are shown for each occupation, but here only the length of the period for the establishment as a whole. The actual daily earnings, or daily rate nearest to average daily earnings of Table XII here, of course, becomes actual average daily earnings as it is the quotient of the total earnings divided by the total days of work done in each establishment.]

K ... COKE.

Es-		Length of the period.	Act- ual aver- age daily earn- ings.	Actual condition for period.				Condition if work- men had continu- ous employment.		
tab- lish- ment num- ber.				Dif- ferent	Days of work done.		Earnings.		Neces-	Conse- quent average
					Total.	A verage.	Total.	Aver-	ployés.	earnings per employé,
13 19 23 28 29 6	United States	1 year 1 year 1 year 1 year 2 year 3 months 1 year	1.724 1.234 1.394 1.244	103 102 37 234	29, 729 18, 124 13, 867 7, 038 7, 867 5, 803 9, 191	97 118 85 43 213 25 161	\$52, 338 \$31, 249 17, 103 9, 808 9, 788 \$8, 032 4, 354	\$170 203 103 61 265 34 76	95. 01 57. 90 44. 13 22. 47 21. 70 63. 19 25. 20	\$551 540 387 436 451 127 173

a In addition 83.522 was paid to outside persons for labor done under contract, which is included in the statement for this establishment on page 236.

b The earnings here shown are for three months only. The statement for this establishment on page 236 is for one year.

L.—IRON	ORE.	
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United States	1 year (a	(6)	(a)	(a)	\$51, 935	(b)	(a)	(a)
do			32, 313	122	Gri, 984	\$253	103. 25	\$618
do	1 year 1.1	131 181	20, 526	113	23, 337	. 129	65. 10	358
do	1 year 1.3		105, 551	165	c 138, 491	216	335. 61	413
do	1 year 1.3	314 262	20, 710	79	d 27, 278	104	66. 17	412
do	1 year 1.0	00 276	32, 993	120	e 52. 322	191	105. 43	501
do	1 year 1.4	17 208	48, 909	182	f 72, 018	269	156. 10	461
do			5, 805	80	g 7, 556	116	18.56	407
do	1 year 1.;	13 110	11,088	101	A 14, 749	134	35. 42	416
do			4, 578	109	i 5, 955	142	14.13	421
	1 year 1.0		7,761	119	18,032	124	24.83	324
	1 year 1.1		15, 570	85	17, 322	93	49. 74	348
do			71, 283		£ 138, 926	177	227. 65	610
do	85 mos 1.3		6, 490	171	8, 428	2-22	29. 91	282
do	6months 1. 1		2,746	61	l 3, 152	70	17.71	178
do		S61 55	4, 106	75	m 3, 551	63	26, 33	135
Continent of Europe			1, 111	296	n 3, 416	246	13. 23	260
		18	1. 345	73	n 1, 267	70	4. 29	293
do'		UJ 202	28, 557	111	20. 126	100	130. 73	111

a Some employes were paid by the quantity, hence the daily rate of pay and days of work done cannot be given.

not be given.

b Number of employes in a few occupations not given.
c In addition \$1,001 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 252 and 594.
d In addition \$1,503 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 252 and 594.
s In addition 21 or more contractors were employed, each of whom agreed to get out ore on cars at \$1.10 per ton, and was credited at the end of each month with the tounage mined. His men were paid each month by the company and their wages are included in the above. The wages so paid were deducted from the contractor's gross earnings and the remainder was paid to him as his profit. These profits, not appearing here, are included, of course, in the statement for this establishment on page 252.
f Includes \$4,227 expended for labor on permanent improvements, which could not be eliminated from the different occupations given above.

g The earnings here shown are for one mine only. The statement for this establishment on pages 252 is for two mines.

- 252 is for two mines.

 A The earnings here shown are for one year. The statements for this establishment on pages 252 and 355 are for nine months only.

 I naddition \$433 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 232 and 555.

 J In addition \$1,137 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 232 and 505.

 E In addition \$4,275 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 233 and 596.

 I In addition \$48 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 232 and 596.

 In addition \$102 was paid to outside persons for labor done under contract, which is included in the statements for this establishment on pages 232 and 596.

 In The earnings here shown are for only a part of the employés, while the statement for this establishment on pages 233 is for three months only.

 The earnings here shown are for only a part of the employés, while the statement on page 233 is for three months only.
- for three months only.

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